

**FINAL
SITE INSPECTION PRIORITIZATION
NASH ROAD LANDFILL
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK**

PREPARED UNDER

**WORK ASSIGNMENT NO. 019-2JZZ
CONTRACT NO. 68-W9-0051**

AUGUST 16, 1993

VOLUME 2 OF 2



REFERENCE NO. 14

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

VOLUME II - APPENDICES

Nash Road Landfill

Site No. 932054

Town of Wheatfield

Niagara County

Date: July 1985



**Prepared for:
New York State
Department of
Environmental Conservation**

**50 Wolf Road, Albany, New York 12233
Henry G. Williams, Commissioner**

**Division of Solid and Hazardous Waste
Norman H. Nosenchuck, P.E., Director**

**By:
ENGINEERING-SCIENCE
In Association With
DAMES & MOORE**

APPENDICES

- APPENDIX A** - FIELD PROCEDURES
- APPENDIX B** - BORING LOGS AND WELL SCHEMATICS
PERMEABILITY TEST DATA
- APPENDIX C** - GEOPHYSICAL SURVEY DATA
- APPENDIX D** - CHEMICAL ANALYSES

APPENDIX A

FIELD PROCEDURES

APPENDIX A

FIELD PROCEDURES

Preliminary Emergency Surface Water Analysis

A preliminary round of surface water sampling was performed in June 1983 by Dames & Moore and Engineering Science. These sampling points are located on the eastern end of the site near the disposal trench and form a network surrounding the suspected "hot spots".

Engineering Science provided sample bottles and performed the chemical analyses. Samples were tested for the indicator parameters. No preservatives were used.

Sampling Procedures

1. Sample bottles were labelled with routine identification information.
2. The sample bottle was unwrapped, opened, and submerged below the surface of the water.
3. As the bottle filled, all air bubbles were allowed to escape from inside the bottle to prevent volatization of chemicals.
4. The bottle was repackaged, placed in the cooler, and refrigerated. Chain of custody documents accompanied the cooler during transportation.

Magnetic Survey

The magnetic surveys at Nash Road were conducted utilizing a Geometrics Model 816/826A Magnetometer. The magnetometer indicated the magnetic field intensity, in gammas, of the earth at a single ground-surface point. The successful application of the magnetometer is determined by the magnetic intensity of the target and by the distance the target is buried below ground surface. For example, a large number of steel drums buried 10 to 20 feet deep would cause a relatively high magnetic value over background and would be easily detected with a magnetometer. On the other hand, only one drum buried 50 feet deep would cause a relatively low magnetic value over background and would not be easily detected with a magnetometer. The magnetometer will also detect areas where soil has been disturbed such as in a pit or trench. Once the natural magnetic field of the undisturbed soil has been altered by the excavation and/or burial of foreign material, the change in the magnetic field over the area can be detected by a magnetometer.

Electrical Resistivity Survey

The electrical resistivity survey consisted of both vertical and horizontal resistivity earth measurements. These measurements,

obtained with a Bison Earth Resistivity Model 2350B Meter, indicated the relative electrical resistance in ohms of the earth to the conductance of an induced electrical current through metal probes or electrodes pushed into the ground. As an example of the resistivity nature of the subsurface, a fresh-water uncontaminated aquifer would exhibit a relatively high resistivity, whereas a contaminated (with metals) aquifer would exhibit a relatively low resistivity.

Vertical resistivity measurements, termed soundings, indicate the variation of resistivity at various depths at one ground-surface point. The resistivity sounding method applied at Nash Road was the "Modified Wenner Electrode Array". In this method the current electrodes (those furthest from the center of the array) are stationary while the potential electrodes (those closest to the center of the array) are moved away from the center at equally spaced distances. In the "Modified Wenner Electrode Array" the potential electrode distance closely approximates the depth of investigation into the subsurface. For example, a sounding with a total potential electrode distance of thirty feet would indicate resistivity values at approximately thirty feet below the ground surface.

Horizontal resistivity measurements, on the other hand, are termed profiles indicating the variation of resistivity at one approximate depth at many ground-surface locations. The resistivity profile method applied at Nash Road was the standard Wenner Array (Bison, 1975). In this method the current and potential electrodes are pushed into the ground at equal distances from one another. The depth of investigation is a zone of the subsurface approximately three-fourths to one times the electrode spacing. For example, an electrode spacing of fifty feet in the Wenner Array would investigate a zone of the subsurface between approximately 38 to 50 feet deep. Five Wenner Arrays were utilized at the Nash Road site to distinguish shallow and deep subsurface variations in resistivity.

Air Quality Monitoring

Air quality monitoring for organic vapors with an HNU photoionization meter was implemented at each hole before, during, and after drilling. The purpose of air quality monitoring was three-fold: to determine whether the use of respirators was needed while on-site, to locate potential "hot-spots" from which vapors may emanate, and to support or disprove preliminary suspicions regarding the locations of the areas of high contamination. Additionally, an air quality survey was performed of the entire site. Several east-west traverses across the site were made while the meter was constantly operating. No contamination was detected.

Drilling

Drilling was performed by Parratt Wolff, Inc. with a CME-70 (truck-mounted) rig. A 3-1/2" I.D. hollow-stemmed continuous-

flight auger was used. All augers were steam-cleaned between borings to prevent cross-contamination during drilling. Two shallow borings were drilled to depths of 10 feet and 14 feet. Five borings were drilled to bedrock at depths of between 65 and 71 feet. Dense till was encountered at the deeper borings and, on occasion, a rotary bit and clean water were used to penetrate large cobbles.

Soil samples were taken by an open-drive split spoon sampler. Shallow borings were sampled continuously at 2-foot intervals. Deep borings were sampled continuously until the lacustrine clay was penetrated. Thereafter, the sampling method was standard sampling at 5-foot intervals. Glass sample jars were provided by the drilling subcontractor. Dames & Moore staff was responsible for drilling documentation at each boring.

Well Installation

Well installation took place immediately after drilling. Johnson stainless steel wire-wound continuous slot (10-slot size) screen was used for each well. The screen segments are 5-feet long and are flush-jointed; all joints are additionally secured with teflon tape. The two shallow wells have 5-foot long screens and the 5 deep wells have 10-foot long screens. All screens were cleaned by steaming or washing with hexane, methanol, and distilled water prior to installation.

Upon completing the screen and riser pipe emplacement, a No. 1 Q-rok sand filter was poured into the annulus to a height of two to four feet above the top of the screened interval. A 3-foot primary bentonite seal was set on top of the sand pack. When installing the shallow wells, a concrete backfill was poured on top of the bentonite seal to the ground surface and a 6" O.D. steel protective casing with a locking cap was installed. After placing the primary bentonite seal in the deep wells, the auger was gradually withdrawn. The approximately 30-foot thick lacustrine clay was allowed to close-in and form a thick seal around the mid-section of the riser pipe. At the 4-foot depth, a supplementary bentonite seal was set to a depth of 2 feet. Concrete backfill was placed on top of the supplementary bentonite seal and a 6" O.D. steel protective casing with a locking cap was installed. Relative ground elevation was surveyed.

Well Development

Shallow wells were bailed until the discharge water was clear. Deep wells were developed by surging with clean water from the rig until the discharge water was clear. The deep wells were then bailed to remove excess water and to allow natural recovery of the well. The bailer was decontaminated between each well by washing with hexane and methanol, and rinsing with distilled water.

Groundwater Sampling

Groundwater samples were taken from each of the wells on-site and from one residential well off-site.

A MasterFlex pump and silicone hose were used to pump the two shallow wells. A Geofilter bladder pump with a teflon bladder and a silicone hose were used on the deep wells and on the residential well. The bladder pump was run by a 1 h.p. air compressor and a gasoline powered generator. All pumping and field testing equipment was decontaminated between wells with a wash of hexane and methanol and a rinse of distilled water. New silicone hose was used at each well and discarded after sampling.

Sample bottles and shipping coolers for samples from the on-site wells were provided by H2M Laboratories in Melville, N.Y. The sample bottles for the off-site, residential wells were provided by Compu-Chem Laboratories of Research Triangle Park, N.C.

On-Site Wells

Static water levels were measured prior to pumping in order to calculate the volume of water in each well. Two well volume exchanges were performed on each well before sampling. During sampling, care was taken to insure minimal aeration of the water occurred. Each bottle was tilted at approximately a 45 degree angle and the sample water was allowed to run slowly down the inside of the bottle to prevent the escape of volatile chemicals from the representative sample. Sample bottles for purgeable chemical analyses and those that contained preservatives were filled to the point where a meniscus would form, capped tightly, and inspected for air bubbles. Bottles in which air bubbles were found were reopened and water was added by droplets until this condition was corrected. Sample bottles for analyses of extractable chemicals were filled in the same manner, except that the fill line was at the bottom of the bottle neck.

After the sample bottles had been filled, they were wrapped in plastic protective sheets, placed in the shipping coolers, and refrigerated. The shipping packages provided by H2M were "Playmate" coolers by Igloo. Zip-loc bags filled with ice were used as the refrigerant and to provide extra cushioning protection during transportation. Chain of custody documents were included inside the shipping coolers, also sealed in separate plastic Zip-loc bags. Unique, tamper-proof "DAMES & MOORE" seals were placed on all of the coolers for quality assurance purposes. All packages were taken to an air courier for delivery to the laboratory with 24 hours of their sampling times.

Field tests performed during sampling were for specific conductance, temperature, and organic vapors. All field testing equipment was decontaminated between wells by washing with hexane and methanol and by rinsing with distilled water.

Off-Site Well Sampling

The off-site well that was sampled for chemical analysis is located at 7403 Nash Road, adjacent to the northwest corner of the landfill site. This property is owned by Mr. Osterman of North Tonawanda. The well on this property has a 6" casing diameter and is 75 feet deep. It is no longer in use.

Approximately one well volume exchanges was performed on Mr. Osterman's well. Precisely the same sampling methods were employed as those used at the on-site wells. However, a different laboratory was used for the chemical analysis of the off-site well, and the shipping procedure was slightly different. The Compu-Chem shipping package consisted of an insulated styrofoam container inside a corrugated paper box. "Blue-Ice" was used as the refrigerant in these packages, and the chain of custody document was taped to the top of the styrofoam container inside the box. A unique, tamper-proof "DAMES & MOORE" seal was placed on the package for quality assurance purposes. This package was taken to an air courier within two hours after the time of sampling.

In Situ Permeability Testing

After sampling each well, a recovery-type permeability test was performed. At the end of pumping, the water level in the well was low. A pressure transducer calibrated to record feet-of-head was lowered, linked to a microprocessing unit with printer, to the bottom of the well. Timed head readings were recorded for up to 30 minutes and permeabilities were calculated according to the formula (Lambe Whitman, 1969):

$$k_h = \frac{d^2 \ln(\frac{4mL}{D})}{8L(t_2 - t_1)} \ln \frac{H_1}{H_2}, \text{ when } \frac{2mL}{D} > 4$$

where: k_h = horizontal permeability
d = diameter of standpipe
m = transformation ratio (assumed to be 1 for case where $k_p = k_v$)
L = intake length
D = diameter of intake (borehole)
t = time
H = Head

At the end of each test, the pressure transducer was removed from the well.

Surface Water and Sediment Sampling

Surface water and sediment sampling bottles were provided by Compu-Chem Laboratories at Research Triangle Park, N.C. Surface water and sediment samples for chemical analysis were intended to

landfill site. Unfortunately, no surface water samples were collected since there was no available standing water during this sampling effort. However, sediment samples were successfully taken. The sampling procedure was to manually press a stainless steel 2-inch diameter tube into the dried sediment to a depth of 4 inches. Sediment sample was then extracted and placed in the sample jars. Sampling tube was decontaminated between sampling points by washing with hexane and methanol and by rinsing with distilled water. Photographs were taken of the three sediment sampling locations.

The sediment samples were packed in insulated styrofoam shipping packages and refrigerated with "Blue-Ice." A chain of custody document was taped to the top of the styrofoam package and the entire parcel was encased in the corrugated paper box. Unique, tamper-proof "DAMES & MOORE" seals were placed on the packages for quality assurance purposes. All packages were taken to an air courier within 6 hours after their sampling times.

Down-Hole Gamma Logging

Each well was logged with a portable Mt. Soprus gamma logging unit. The procedure was to lower the probe to the bottom of the well and record gamma counts per second as the probe was slowly raised up the well to the ground surface. Typically, two runs per well were performed to check the precision of the unit and to allow for corrections to any portion of a record during which the paper or pen may have skipped or slid. After logging each well, the probe and cable was rinsed with distilled water.

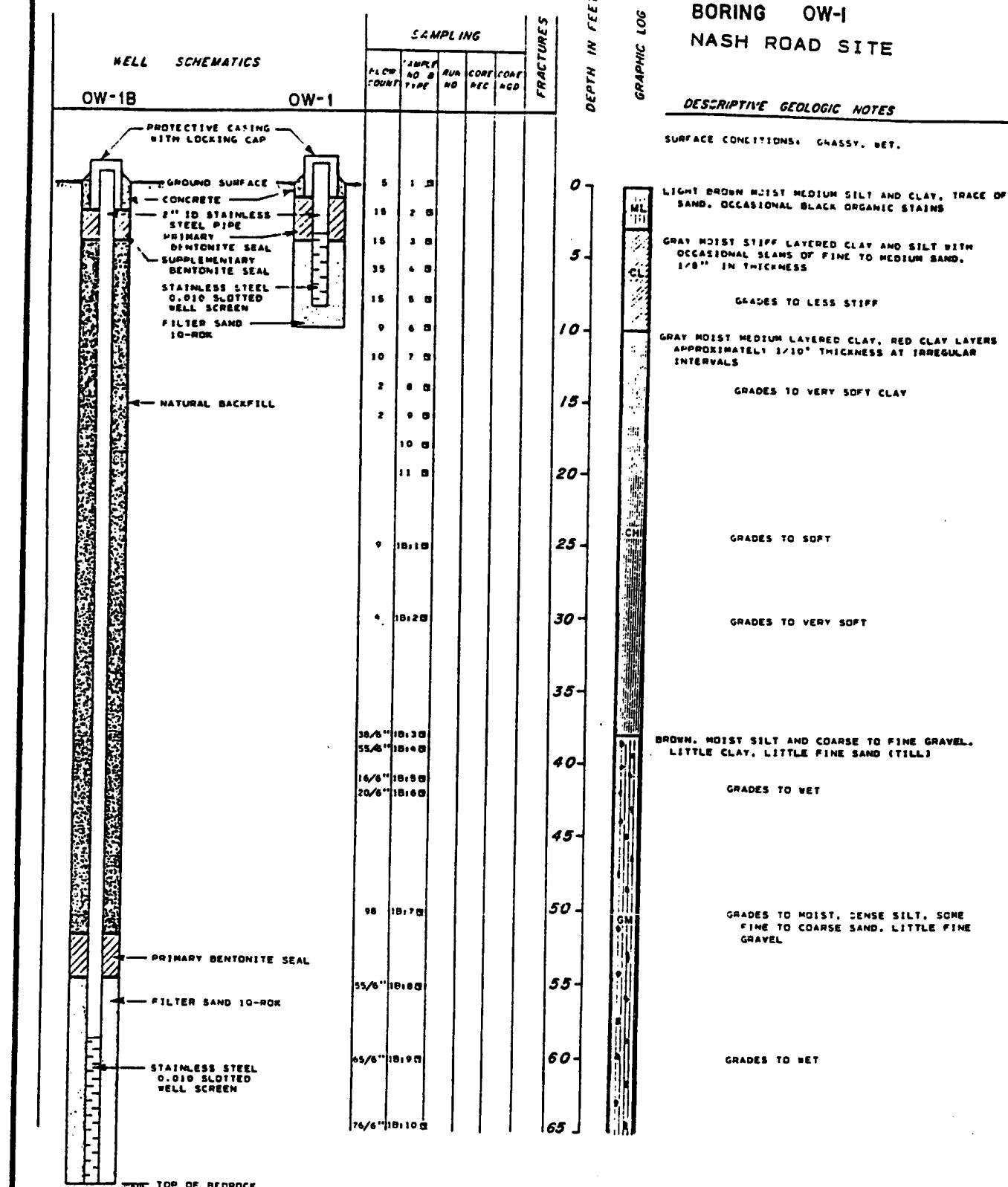
APPENDIX B
BORING LOGS AND WELL SCHEMATICS
PERMEABILITY TEST DATA

b

BORING OW-1
NASH ROAD SITE

DESCRIPTIVE GEOLOGIC NOTES

SURFACE CONDITIONS. GRASSY, ETC.



**TOP OF BEDROCK
SOIL SAMPLING INFORMATION**

3 STANDARD PENETRATION TEST

■ UNDISTURBED SAMPLE

E DISTURBED SAMPLE

□ NO SAMPLE RECEIVED

RECYCLED INFORMATION

REF. 1 - CAPE LOSS ZONE

INPUT CORE
RECOVERY

א ב י ו י ו י ו י ו

१२४५

-  Zone of core loss
 Biscay zone
 Dipotassium silicate
 Fracture plane at approximately angle to core axis
 Mineralized fracture C = calcite S = sulfide
 Fractured zone
 Void

KEY TO FIG. 1. SCHEMATIC

- G-2 Grout**
 - G-3 Bentonite Seal**
 - G-7 Sand Filter**
 - G-9 Well Screen**

DAMES & MOORE

**BORING OW-1
NASH ROAD SITE**

DESCRIPTIVE GEOLOGIC NOTES



TOP OF BEDROCK AT 68.6'. BEDROCK IS
DOLOSTONE.
BORING TERMINATED AT A DEPTH OF 68.6'
ON JUNE 31, 1984.

| WELL SCHEMATICS | SAMPLING | | | | | FRACTURES | DEPTH IN FEET |
|-----------------|------------|-------------------|--------|----------|----------|-----------|---------------|
| | FLOW COUNT | SAMPLE NO. 8 TYPE | PUN NO | CORE REC | CORE ROD | | |
| | | | | | | | 68.6 |
| | | | | | | | 70 |

SOIL SAMPLING INFORMATION

STANDARD PENETRATION TEST

UNDISTURBED SAMPLE

DISTURBED SAMPLE

NO SAMPLE RECOVERED

SOIL CORE INFORMATION

CORE LOSS ZONE

PERCENT CORE RECOVERY

CORE RPD

FRACTURES

- TYPE** Zone of core loss
- TYPE** Breccia zone
- TYPE** Dipslip slickensides
- TYPE** Fractures shown at approximate angle to core axis
- TYPE** Mineralized fracture - C = calcite S = sulfide
- TYPE** Fractured zone
- TYPE** Void

WELL SCHEMATIC

GR Grout

MS Montonite Seal

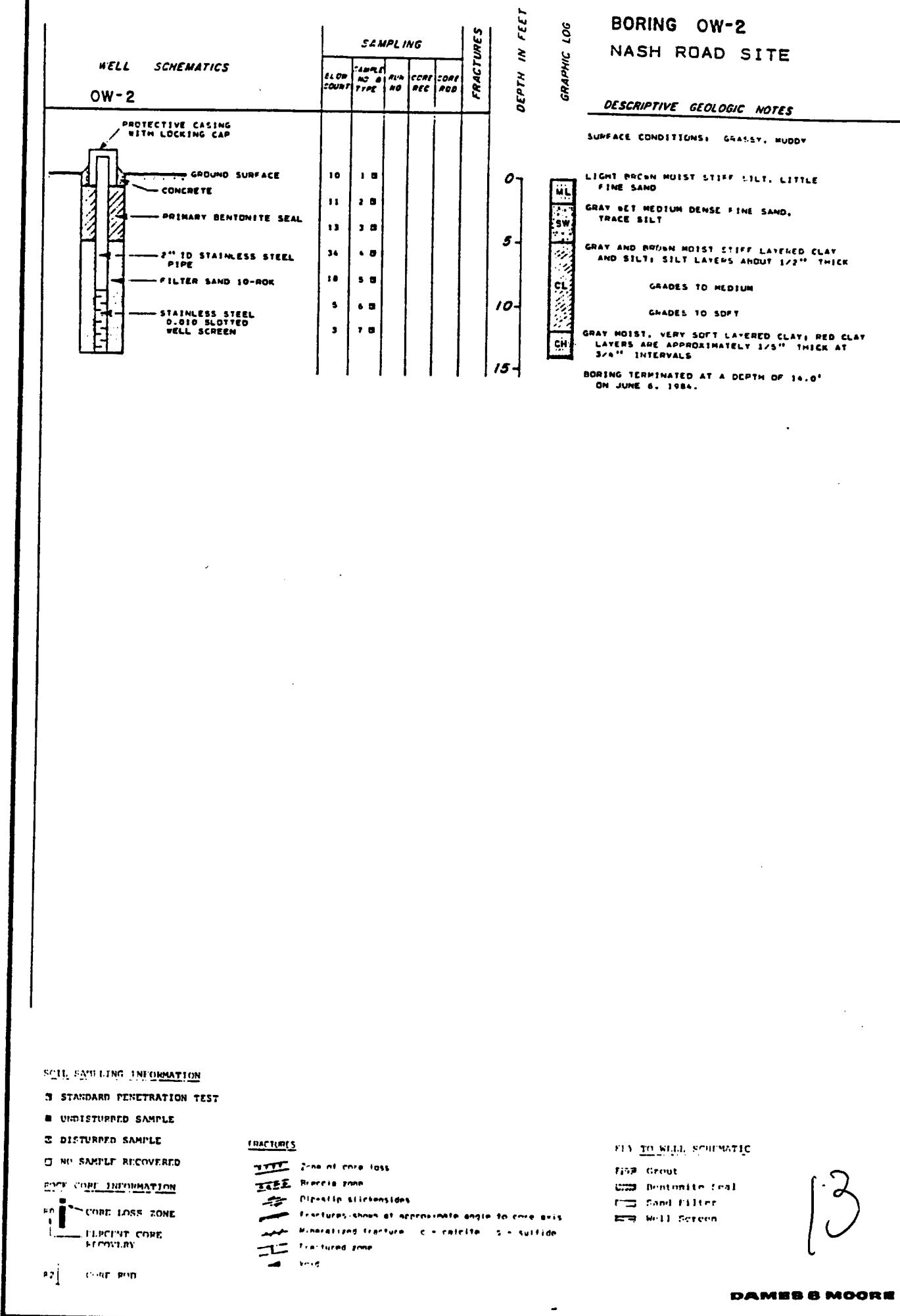
SD Sand Filter

WS Well Screen

12

DAMES & MOORE

BORING OW-2
NASH ROAD SITE

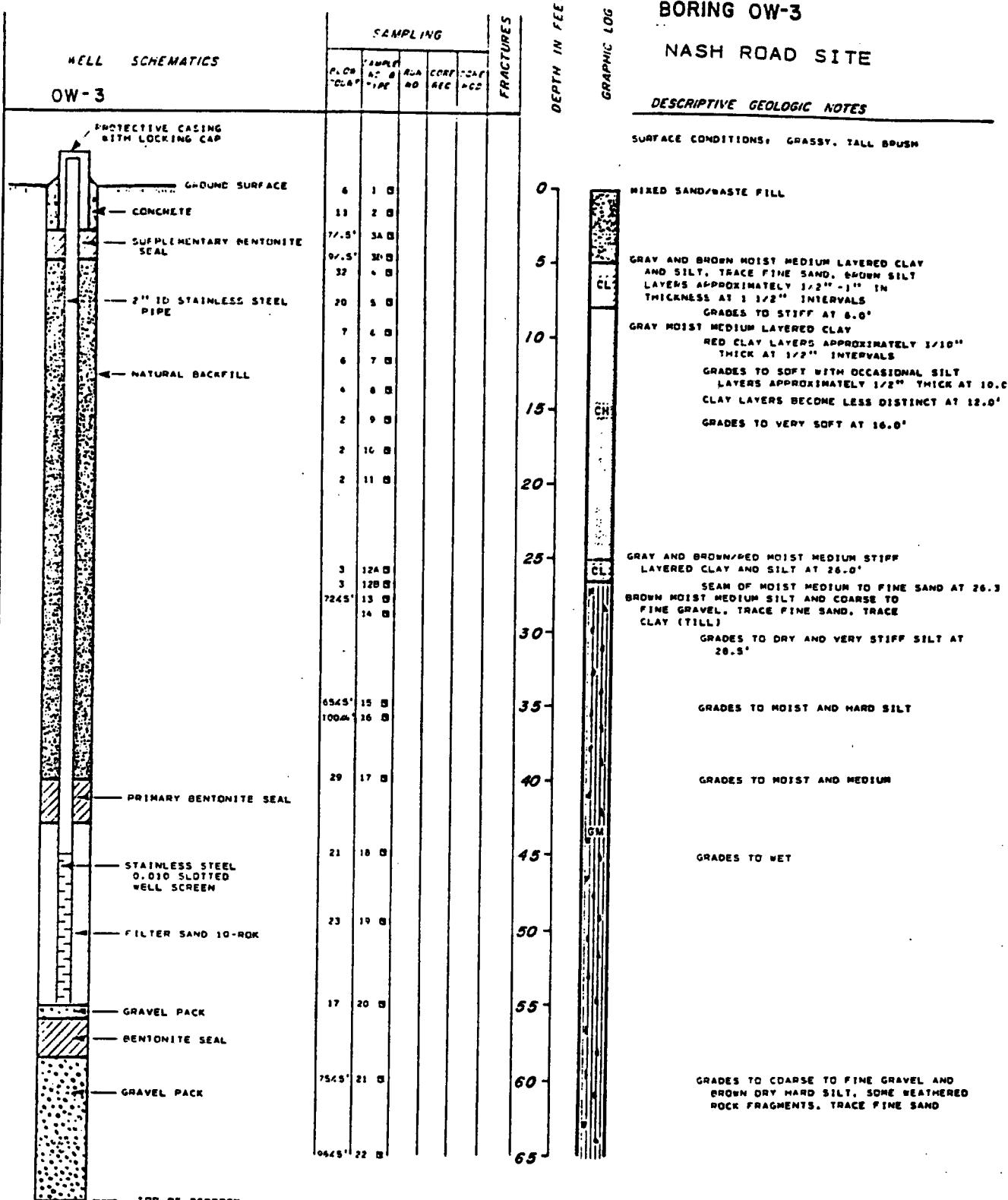


BORING OW-3

NASH ROAD SITE

DESCRIPTIVE GEOLOGIC NOTES

SURFACE CONDITIONS: GRASSY, TALL BRUSH



SOIL SAMPLING INFORMATION

2-01-80

PIEZOMETRIC SURFACE & DATE TESTED

A STANDARD PENETRATION TEST

B UNDISTURBED SAMPLE

C DISTURBED SAMPLE

D NO SAMPLE RECOVERED

E ROCK MASS INFORMATION

F 1" CORE LOSS ZONE

G 1" DEBRIS CORE RECOVERY

H 1" DEBRIS

Fractures

Zone of core loss

Brittle zone

Ductile cleavage

Fractures shown at approximate angle to core axis

Mineralized fracture - c = calcite, s = sulfide

Fraud zone

Void

ELE. 10 WELL SCHEMATIC

Fig 2. Great

Bentonite Seal

Sand Filter

Well Screen

DANIEL B MOORE

14

FIGURE R 2A

BORING OW-3
NASH ROAD SITE

DESCRIPTIVE GEOLOGIC NOTES

GRAPHIC LOG

4.11
GM
6.11

TOP OF BEDROCK 68.7'
BEDROCK IS DOLOSTONE
BORING TERMINATED AT A DEPTH OF 68.7'
ON JUNE 7, 1984.

| WELL SCHEMATICS | SAMPLING | | | | | | FRACTURES | DEPTH IN FEET |
|-----------------|------------|-------------|------|----|----|----|-----------|---------------|
| | ALCO COUNT | SAMPLE TYPE | AC 8 | 40 | 60 | 80 | | |
| | | | | | | | | 65 - |
| | | | | | | | | 70 - |

SOIL SAMPLING INFORMATION

1 STANDARD PENETRATION TEST

2 UNDISTURBED SAMPLE

3 DISTURBED SAMPLE

4 NO SAMPLE RECOVERED

SOIL CORE INFORMATION

 1 CORE LOSS ZONE
2 DILUTED CORE RECOVERY

3 CORE POD

FRACTURES

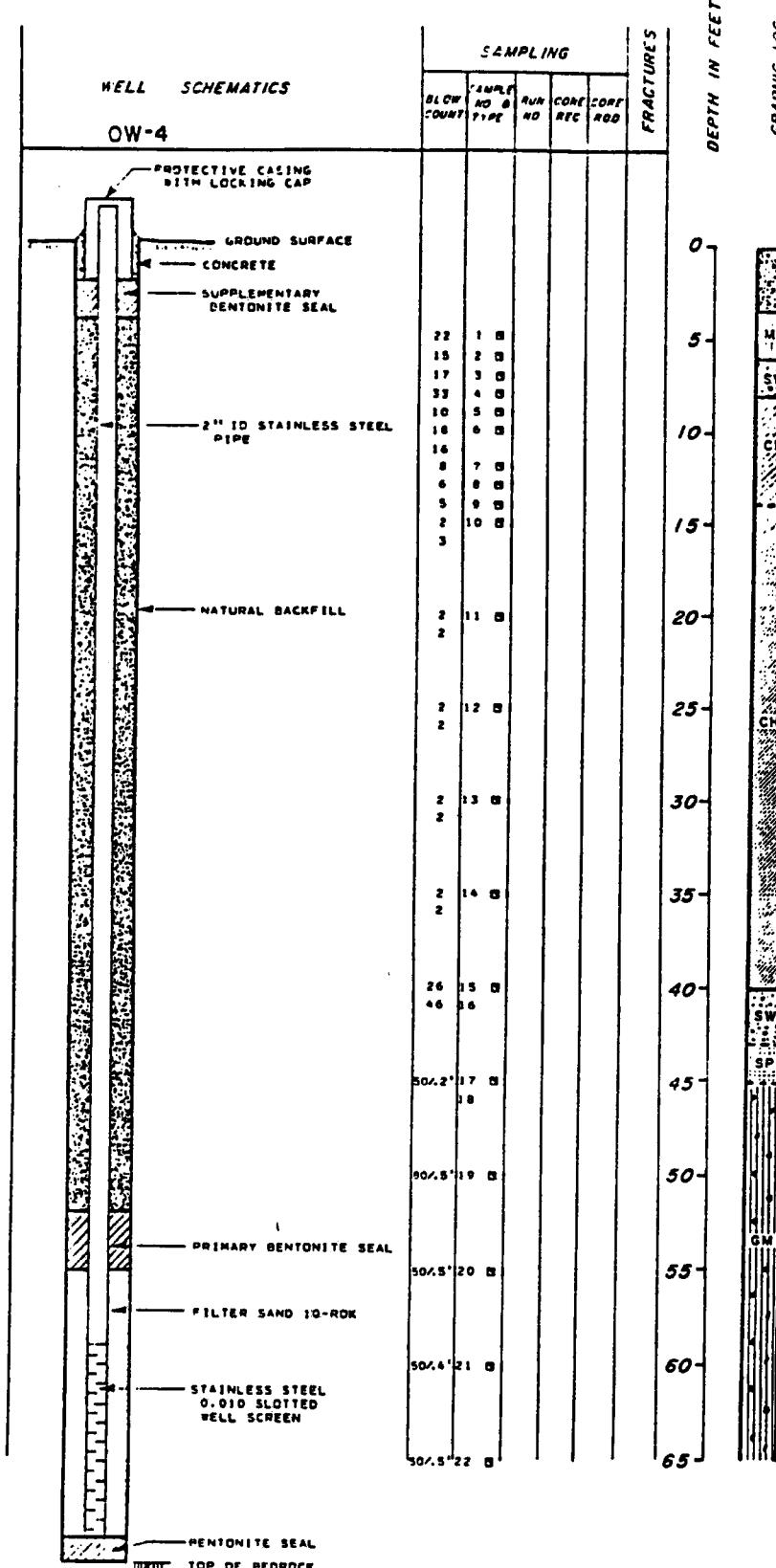
-  Zone of core loss
-  Borehole zone
-  Ductile stretching
-  Fracture plane at approximate angle to core axis
-  Mineralogic fracture - C = calcite S = sulfide
-  Fracture zone
-  Void

KEY TO WELL SCHEMATIC

-  Grout
-  Bentonite Seal
-  Sand Filter
-  Well Screen

DAMES & MOORE

BORING OW-4
NASH ROAD SITE

**DESCRIPTIVE GEOLOGIC NOTES**

SURFACE CONDITIONS: GRASSY, SOME SURFACE TRASH

0 MIXED SAND/WASTE FILL

5 GRAY MOIST SILT AND CLAY

10 GRAY WET MEDIUM TO FINE SAND, TRACE SILT, ORGANIC ODOR, SOME BLACK STAIN

GRAY AND BROWN MOIST LAYERED SILT AND CLAY, TRACE FINE SAND
LAYERS APPROX. 1/2" THICK
GRADES TO WET BROWN SILT AND CLAY

15 GRADES TO CLAY, TRACE SILT

20

25

30

35

40

45

50

55

60

65

SOIL SAMPLING INFORMATION

- STANDARD PENETRATION TEST
- UNDISTURBED SAMPLE
- DISTURBED SAMPLE
- NO SAMPLE RECOVERED

KEY TO WELL SCHEMATIC

- Standard Penetration Test
- Bentonite Seal
- Sand Filter
- Well Screen

16

BORING OW-4
NASH ROAD SITE

DESCRIPTIVE GEOLOGIC NOTES



TOP OF BEDROCK 70.3'
BEDROCK IS DOLOSTONE
BORING TERMINATED AT A DEPTH OF 70.3'
ON JUNE 13, 1984.

WELL SCHEMATICS

| P. C.D. COUNT | SAMPLING | | | | | FRACTURES |
|------------------|--------------|----|-----------|-------------|-------------|-----------|
| | CORE TYPE | NC | RUN NO | CORE REC | CORE RAD | |
| | | | | | | |

DEPTH IN FEET

65'-
70'-

SOIL SAMPLING INFORMATION

(A) STANDARD PENETRATION TEST

(B) UNDISTURBED SAMPLE

(C) DISTURBED SAMPLE

(D) NO SAMPLE RECOVERED

ROCK CORE INFORMATION

(E) NO CORE 140-5 ZONE

(F) TURBID CORE
RECOVERY

(G) GOOD RECOVERY

FRACTURES

- Zone of core loss
- Breccia zone
- Dip-slip slickensides
- Fracture-shatter at approximate angle to core axis
- Mineralized fracture - c = calcite, s = sulfide
- Fractured zone
- Fissile

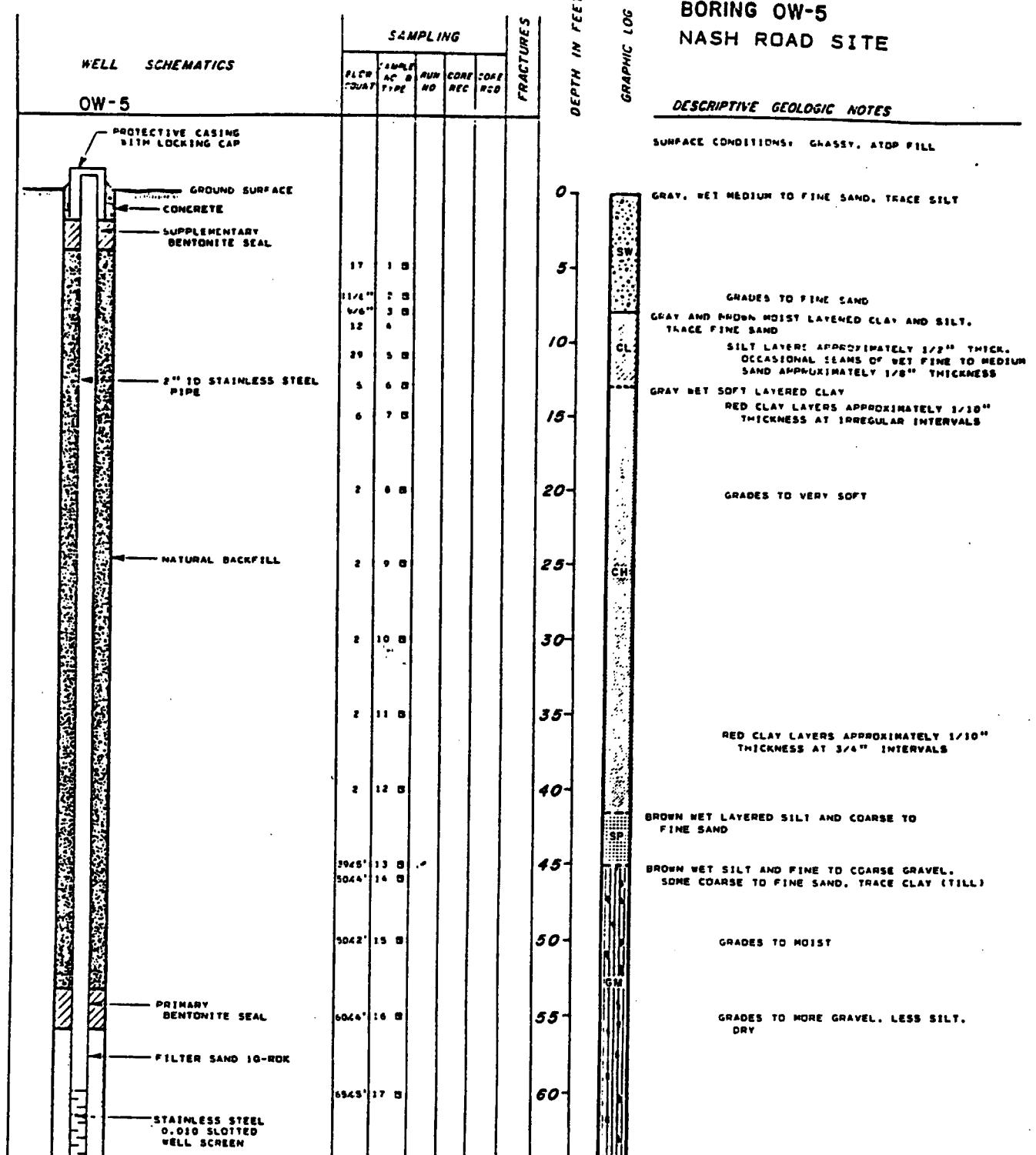
KEY TO WELL SCHEMATICS

- (A) Grout
- (B) Bentonite Seal
- (C) Sand Filter
- (D) Well Screen

[Signature]

BORING OW-5

NASH ROAD SITE

**SOIL SAMPLING INFORMATION**

- STANDARD PENETRATION TEST
- UNDISTURBED SAMPLE
- DISTURBED SAMPLE
- NO SAMPLE RECOVERED

KEY TO WELL SCHEMATIC

- Grout
- Bentonite Seal
- Sand Filter
- Well Screen

8

BORING OW-5
NASH ROAD SITE

DESCRIPTIVE GEOLOGIC NOTES



TOP OF DOLOSTONE BEDROCK AT 69.0'

BORING TERMINATED AT A DEPTH OF 70.0'
ON JUNE 16, 1986.

WELL SCHEMATICS

| SAMPLING | | | | | FRACTURES | DEPTH IN FEET |
|--------------|-------------|------|----------|----------|-----------|---------------|
| SAMPLE COUNT | SAMPLE TYPE | GRAN | CORE REC | COAT REC | | |
| | | | | | | 65 |
| | | | | | | 70 |

SOIL SAMPLING INFORMATION

STANDARD PENETRATION TEST

UNDISTURBED SAMPLE

DISTURBED SAMPLE

NO SAMPLE RECOVERED

CORE LOGGING INFORMATION

CORE LOSS ZONE

DISTORTED CORE RECOVERY

CORE RPD

FRACTURES

- Zone of core loss
- Bentonite zone
- Dip-slip slickensides
- Fractures shown at approximate angle to core axis
- Mineralized fracture C = calcite S = sulfide
- Fractured zone
- Void

KEY TO WELL SCHEMATIC

- Grout
- Bentonite Seal
- Sand Filter
- Well Screen

19

BORING OW-6

NASH ROAD SITE

DESCRIPTIVE GEOLOGIC NOTES

SURFACE CONDITIONS: VERY MUDDY WITH STANDING WATER; MARSHY GRASS

0' MIXED SAND/WASTE FILL

5' GRAY WET MEDIUM TO FINE SAND. LITTLE SILT. SOME BLACK STAINS

10' GRAY AND BROWN MOIST STIFF LAYERED CLAY AND SILT. SILT LAYERS APPROXIMATELY 1/4" THICK AT 1" INTERVALS

15' GRAY MOIST STIFF CLAY GRADES TO MEDIUM CLAY AT 13.0' GRADES TO SOFT AT 18.0'

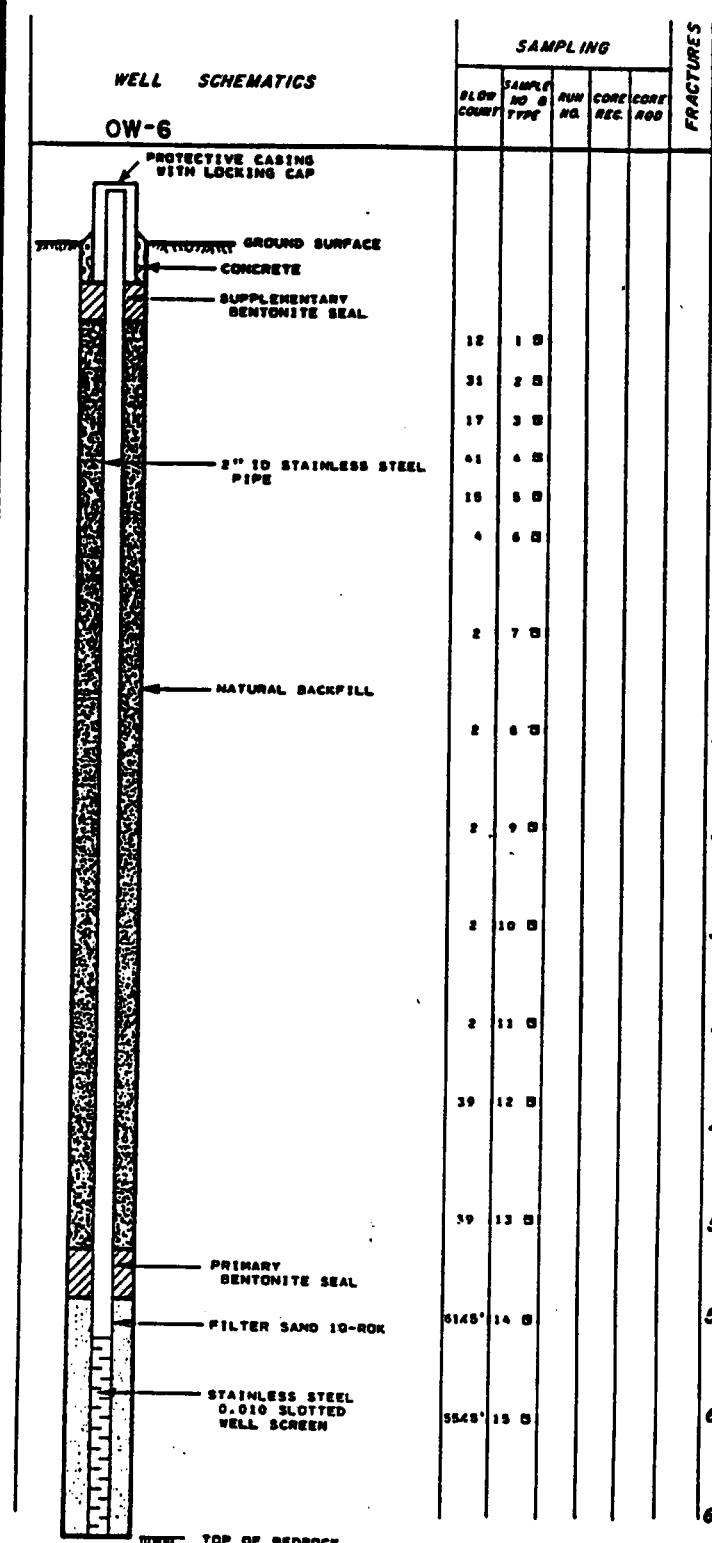
20' GRADES TO WET RED CLAY LAYERS APPROXIMATELY 1/2" THICK AT 1 1/2 TO 2" INTERVALS (DETECTABLE ORGANIC ODOR)

25' 30' 35' 40' 45' 50' 55' 60' 65' RED CLAY LAYERS APPROXIMATELY 2" THICK AT 1" INTERVALS AT 35.0' TRACE SMALL BLACK SPOTS OF ORGANIC MATERIAL IN RED LAYERS

BROWN DRY MEDIUM SILT, AND MEDIUM TO FINE GRAVEL. TRACE CLAY. TRACE FINE TO COARSE SAND (TILL)

GRADES TO MOIST

GRADES TO WET. MORE GRAVEL. LESS SILT



SOIL SAMPLING INFORMATION

- STANDARD PENETRATION TEST
- UNDISTURBED SAMPLE
- DISTURBED SAMPLE
- NO SAMPLE RECOVERED

ROCK CORE INFORMATION

NO CORE LOSS ZONE

PERCENT CORE RECOVERY

CORE RND

FRACTURES

- Zone of core loss
- Breccia zone
- Dip-slip slickensides
- Fractures shown at approximate angle to core axis
- Mineralized fracture c = calcite s = sulfide
- Fractured zone
- Void

KEY TO WELL SCHEMATIC

- Grout
- Bentonite Seal
- Sand Filter
- Well Screen

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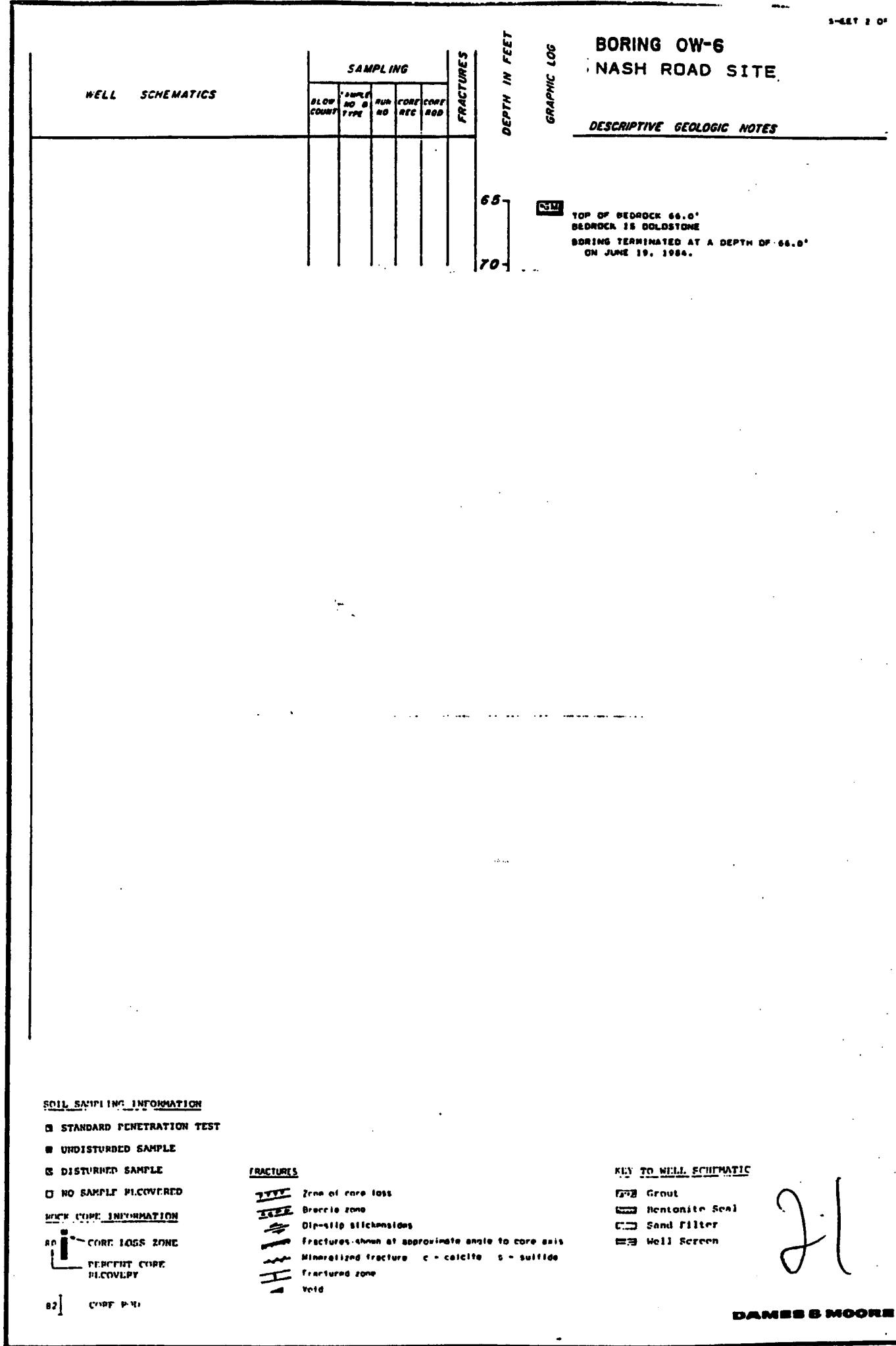
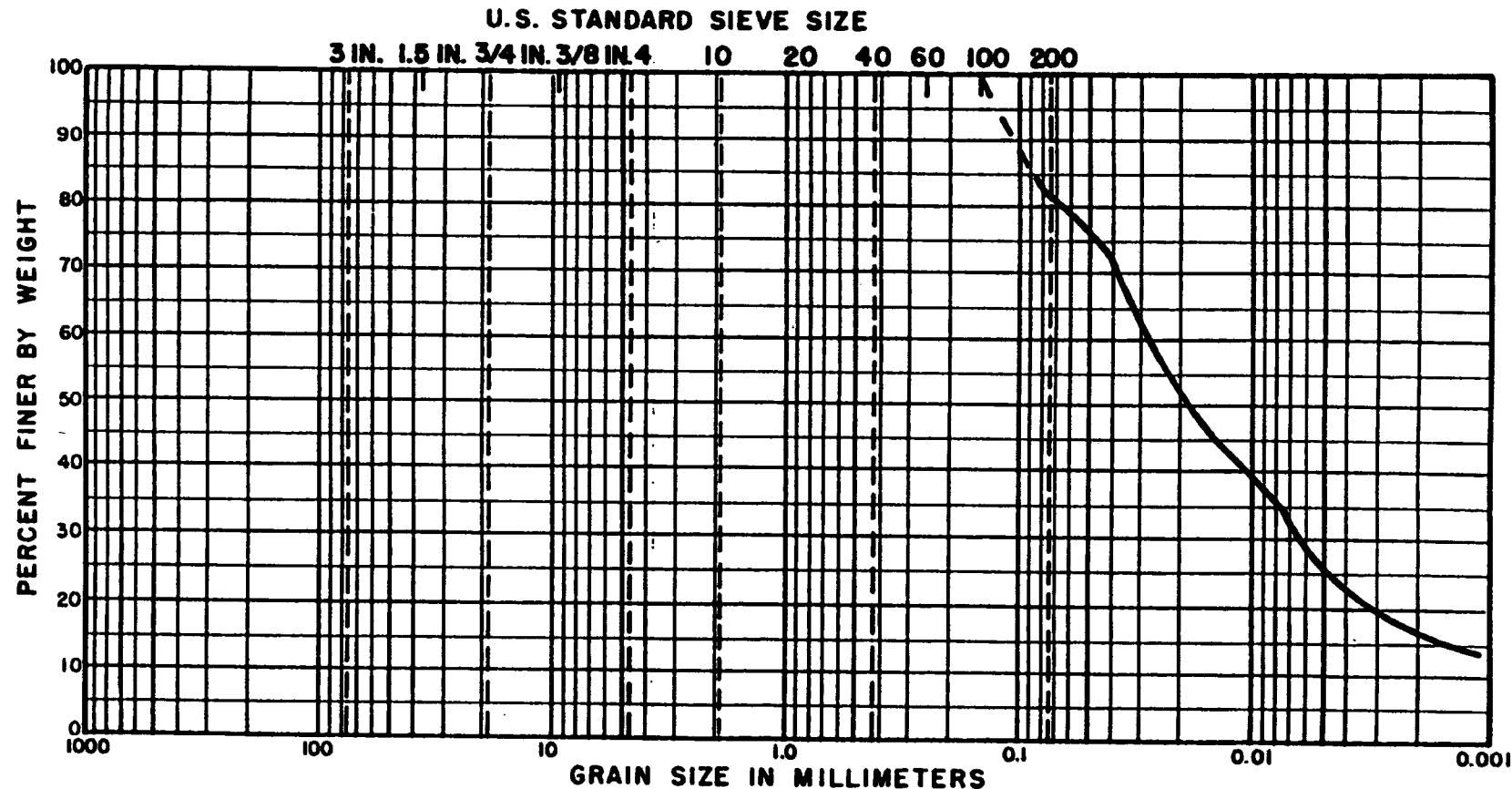


FIGURE B.6B

FILE _____
 BY _____ DATE _____
 CHECKED BY _____ DATE _____

REVISIONS
 BY _____ DATE _____
 BY _____ DATE _____
 PLATE _____ OF _____



| COBBLES | | GRAVEL | | SAND | | | SILT OR CLAY | | | |
|---------|-------------|--------|-------------|--------|--------|------|----------------|--|--|--|
| BORING | DEPTH | COARSE | FINE | COARSE | MEDIUM | FINE | NASH ROAD SITE | | | |
| OW-1 | 2.0' - 4.0' | ML | YELLOW SILT | 15.2% | | | | | | |

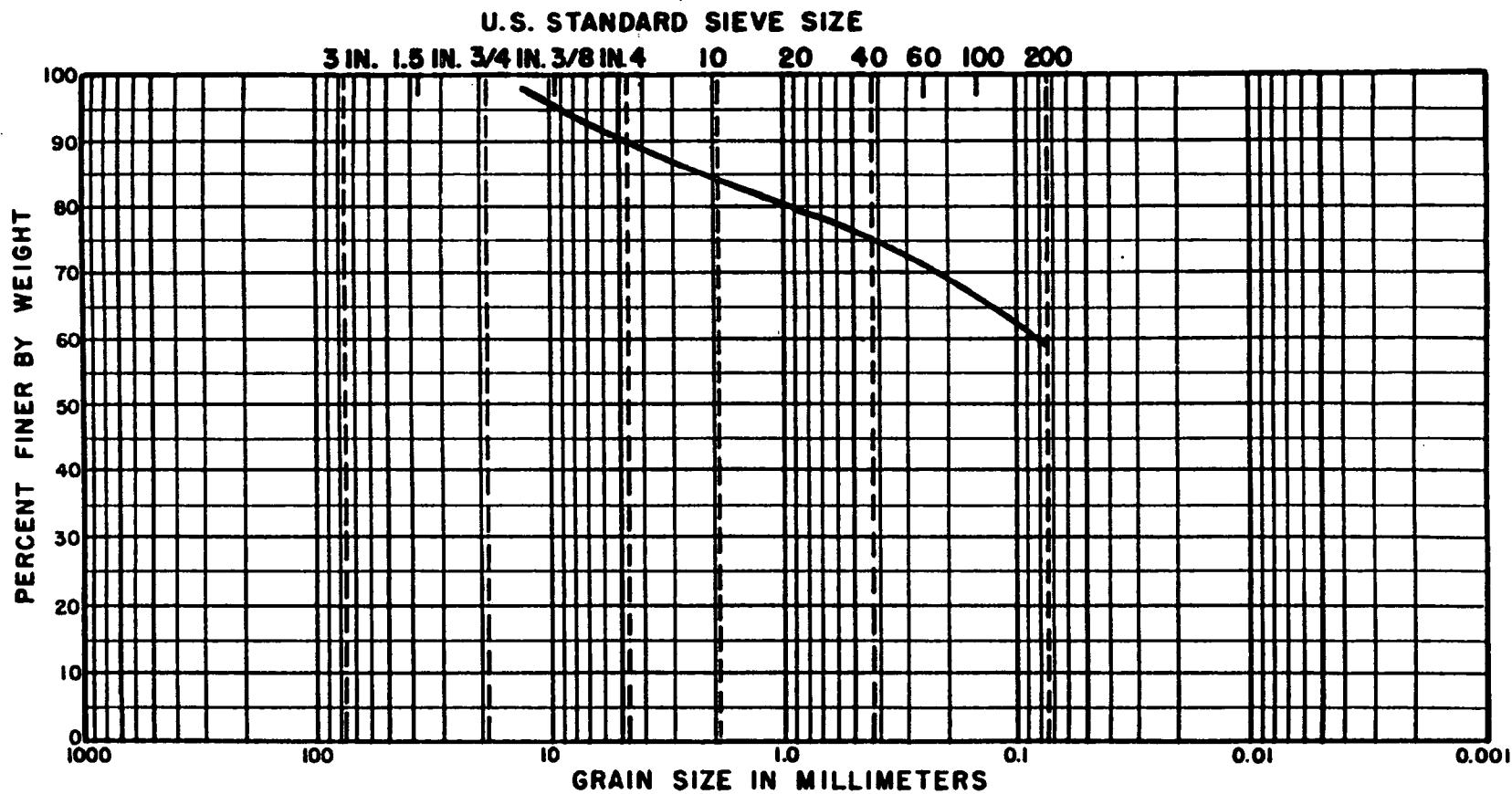
Note: Black sand sized particles and froth
 on top of solution in hydrometer;
 soapy odor

GRADATION CURVE

DANIELS & MOORE

PWLL305 - 19
 BY D. Tamm DATE 8/15/84
 CHECKED BY _____ DATE _____

SIGNS _____
 BY _____ DATE _____
 PLATE _____ OF _____



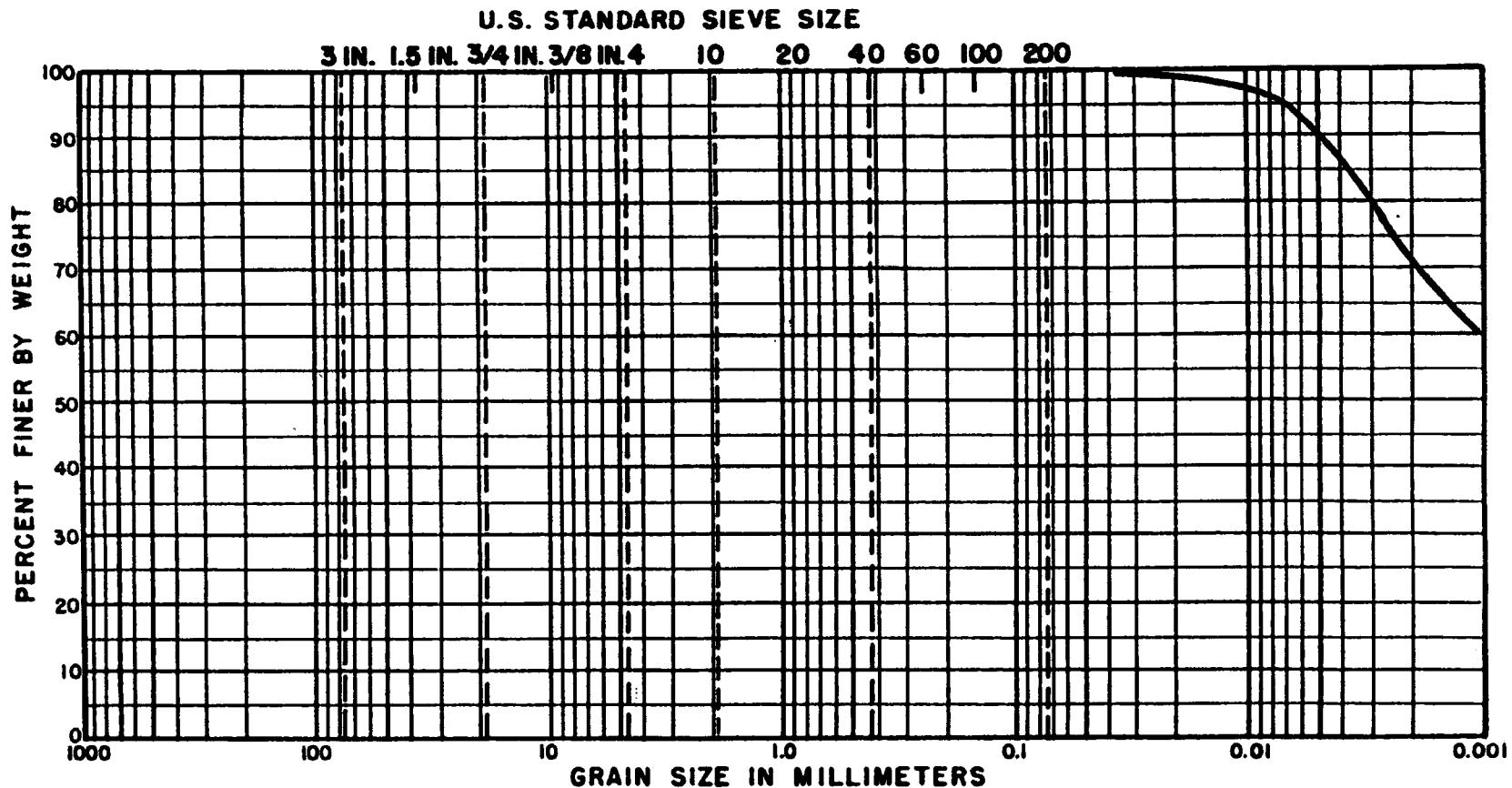
| COBBLES | GRAVEL | | SAND | | | SILT OR CLAY | |
|---------|--------|------|--------|---------|------|--------------|--|
| | COARSE | FINE | COARSE | MEEDIUM | FINE | | |

| BORING | DEPTH | CLASSIFICATION | | NAT | WC | LL | PL | PI | |
|--------|--------------|----------------|--------------------|-----|----|----|----|----|----------------|
| OW1-B | 50.0 - 51.5' | GM | PINKISH BROWN TILL | | | | | | NASH ROAD SITE |

J.C.

FILE _____
 BY _____ DATE _____
 CHECKED BY _____ DATE _____

EDITIONS
 BY _____ DATE _____
 BY _____ DATE _____
 PLATE _____ OF _____



| COBBLES | GRAVEL | | SAND | | | SILT OR CLAY | |
|---------|--------|------|--------|--------|------|--------------|--|
| | COARSE | FINE | COARSE | MEDIUM | FINE | | |

| BORING | DEPTH | CLASSIFICATION | | NAT. WC | LL | PL | PI | |
|--------|---------------|----------------|----------------------------|---------|----|----|----|----------------|
| OW-4 | 12.0' - 13.0' | CL | GRAY BROWN LACUSTRINE CLAY | 33.2% | | | | NASH ROAD SITE |

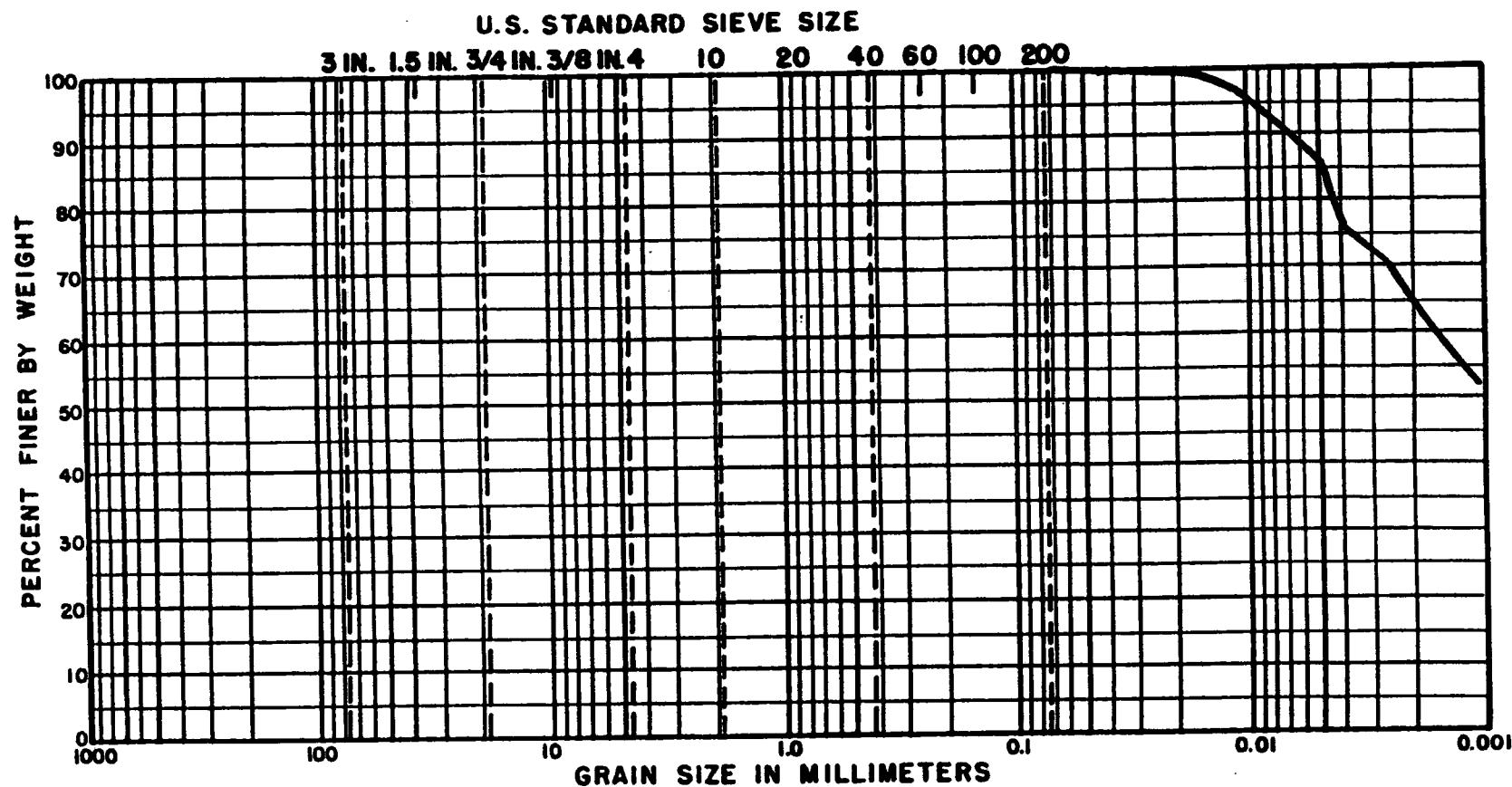
JF
DAMNEE MOORE

COLOR: GRAY - BROWN

GRADATION CURVE

FILE _____
 BY _____ DATE _____
 CHECKED BY _____ DATE _____

100%
 BY _____ DATE _____
 BY _____ DATE _____
 PLATE _____ OF _____



| COBBLES | | GRAVEL | | SAND | | | SILT OR CLAY | |
|---------|---------------|--------|------|-----------------------|--------|------|--------------|----------------|
| BORING | DEPTH | COARSE | FINE | COARSE | MEDIUM | FINE | | |
| OW-4 | 30.0' - 32.0' | CLT | | BROWN LACUSTRINE CLAY | 36.5% | | | NASH ROAD SITE |

NOTE: Small bubbles throughout
solution in hydrometer

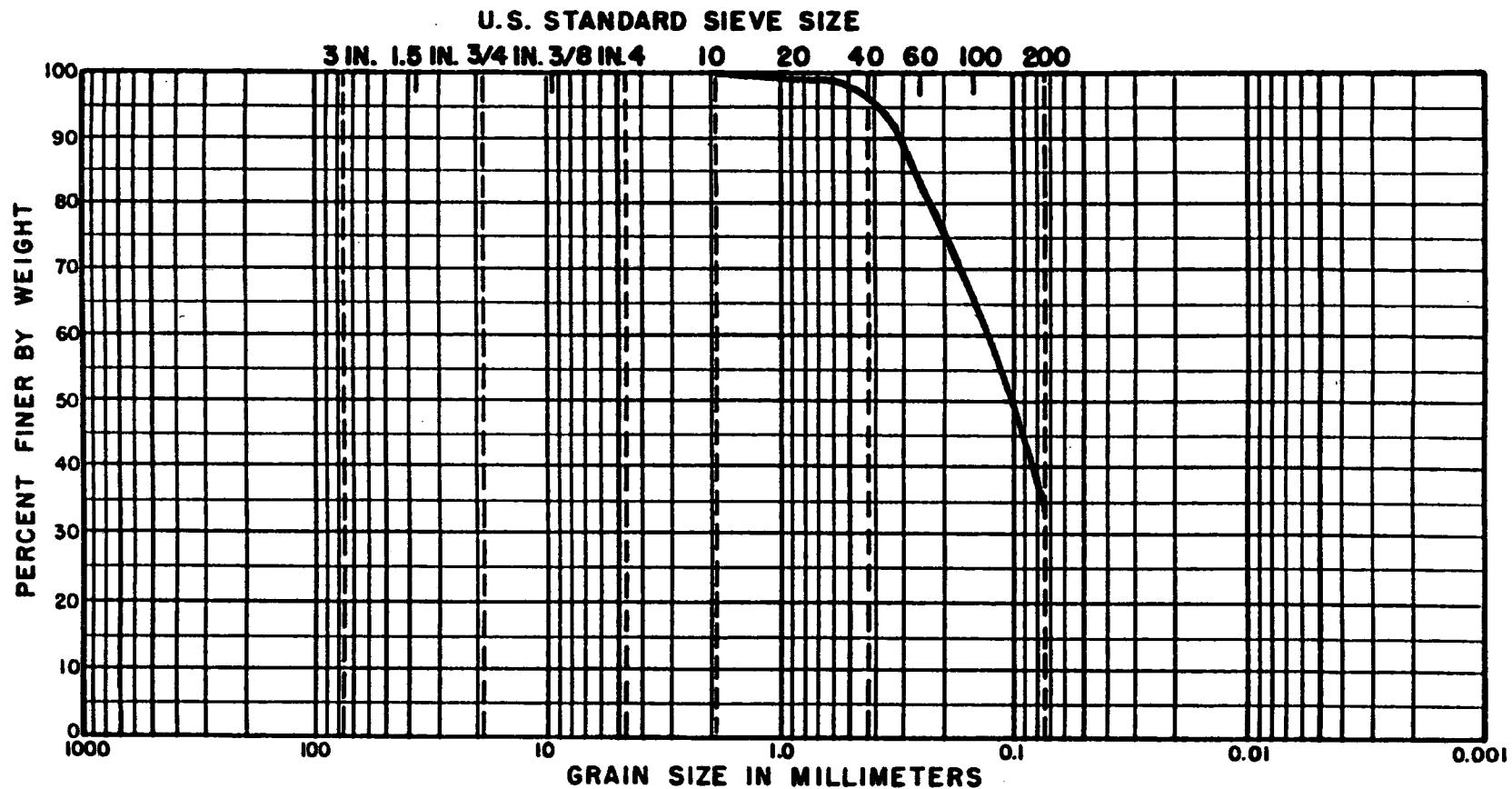
COLOR: Light brown

GRADATION CURVE

DAMES & MOORE

POLAROID - 19
 BY D. THOMAS DATE 3/15/87
 CHECKED BY _____ DATE _____

REVISIONS
 BY _____ DATE _____
 BY _____ DATE _____
 PLATE OF _____



| BOREHOLE | DEPTH | CLASSIFICATION | | | NAT. WC | LL | PL | PI | SILT OR CLAY | | |
|----------|--------------|----------------|-----------------|--------|---------|------|----|----|----------------|--|--|
| | | COBBLES | GRAVEL | SAND | | | | | | | |
| | | COARSE | FINE | COARSE | MEEDIUM | FINE | | | | | |
| OW-4 | 44.6 - 45.0' | SP | LOWER SAND UNIT | | | | | | NASH ROAD SITE | | |

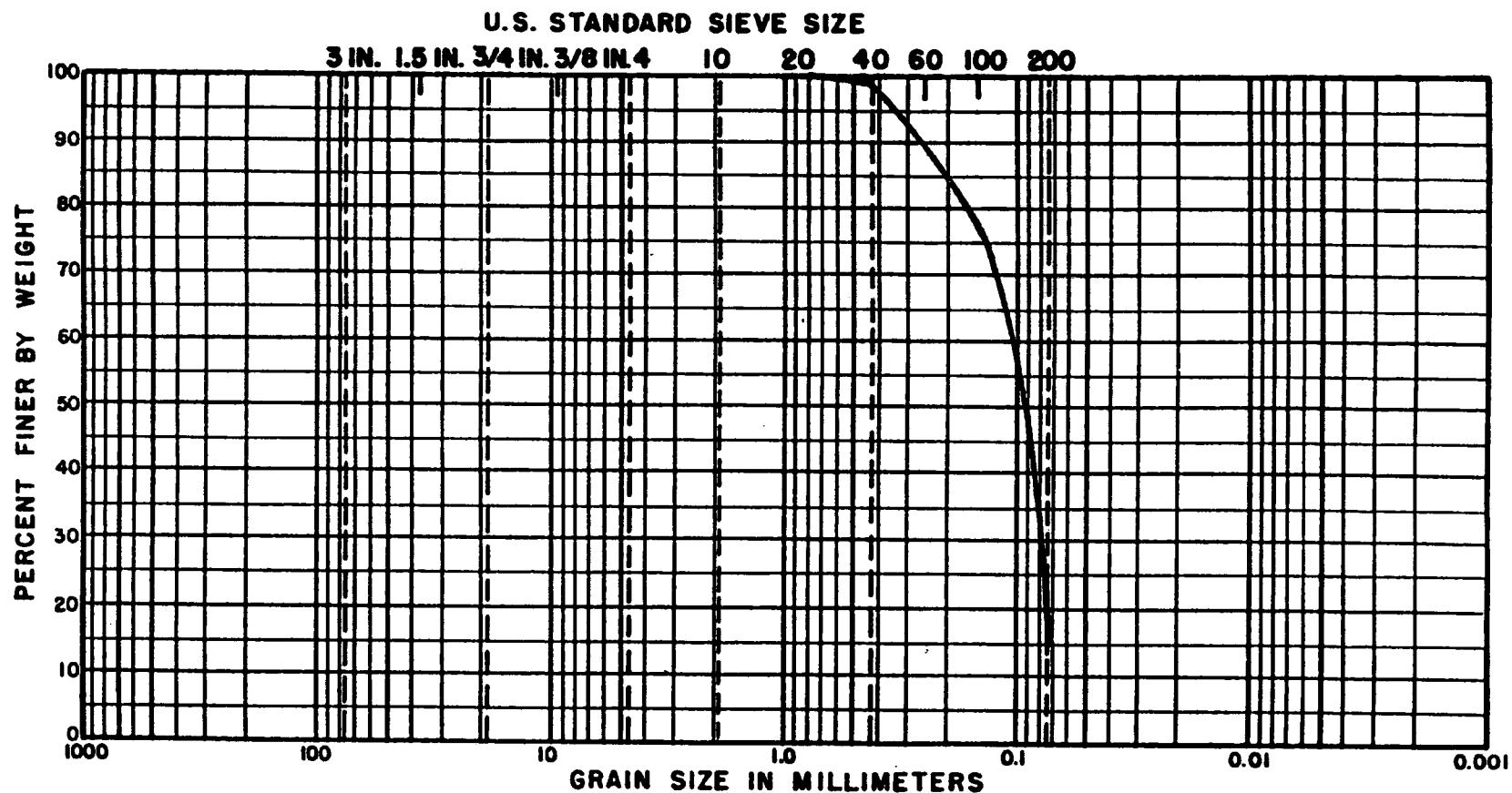
GRADATION CURVE

DANIELS & MOORE
[Handwritten signature]

PL-12205-002-19
BY D. J. Moore DATE 2/15/74
CHECKED BY _____ DATE _____

REVISIONS
BY _____ DATE _____
BY _____ DATE _____
PLATE OF _____

Z5272 (REV. 4-62)



| COBBLES | GRAVEL | | | SAND | | | SILT OR CLAY | | |
|---------|------------|----------------|-----------------|---------|---------|----|--------------|----|----------------|
| | COARSE | FINE | COARSE | MEEDIUM | FINE | | | | |
| BORING | DEPTH | CLASSIFICATION | | | NAT. WC | LL | PL | PI | NASH ROAD SITE |
| OW-5 | 5.0 - 7.0' | SW | UPPER SAND UNIT | | | | | | |

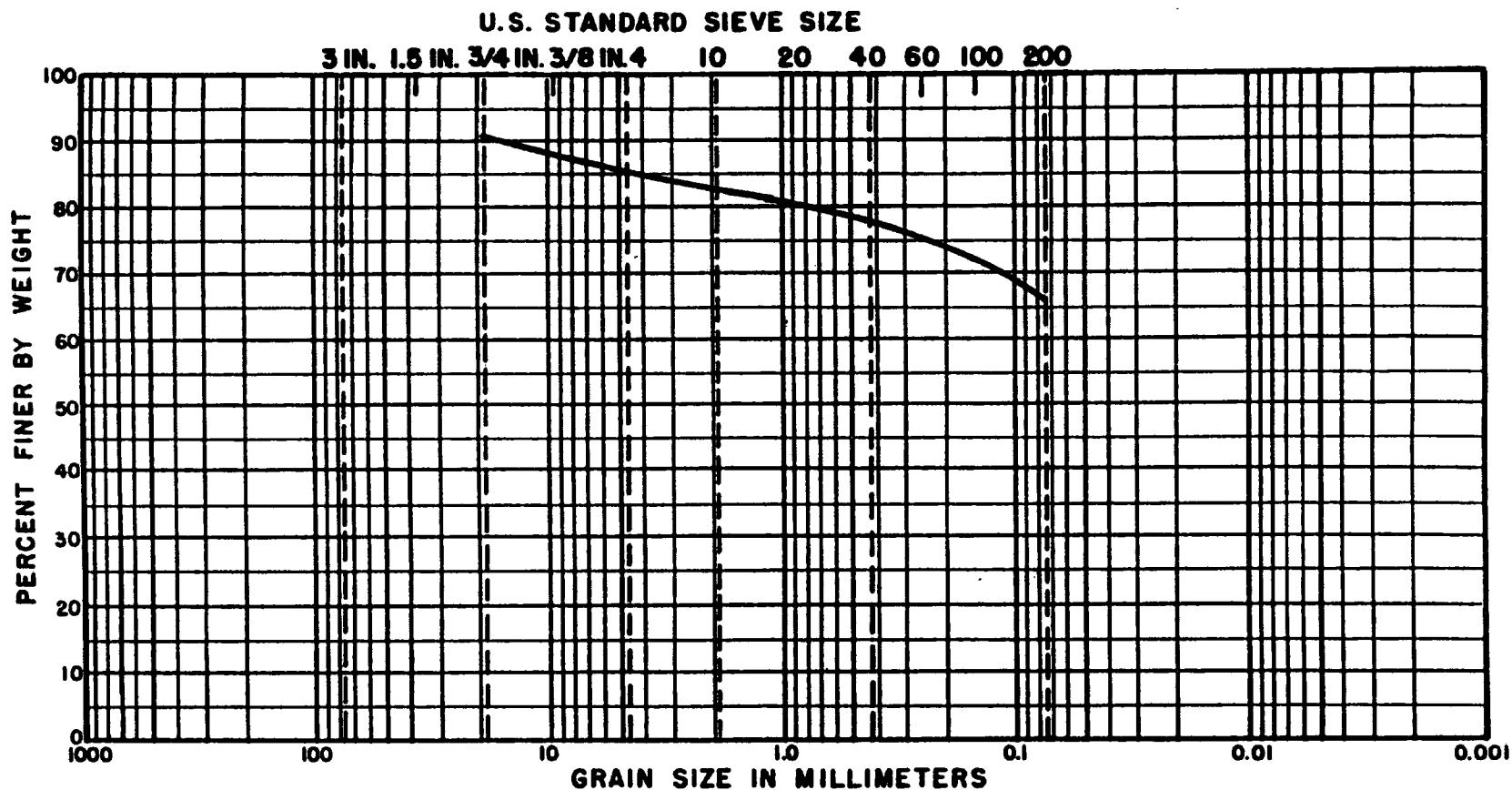
GRADATION CURVE

FIGURE B-1

J. C. Moore

330 3-14
 BY W. Jones DATE 8/10/54
 CHECKED BY DATE

REVISIONS
 BY DATE
 BY DATE
 PLATE OF



| COBBLES | GRAVEL | | SAND | | | SILT OR CLAY | | | |
|---------|--------------|----------------|--------------------|--------|---------|--------------|----|----|----------------|
| | COARSE | FINE | COARSE | MEDIUM | FINE | | | | |
| BORING | DEPTH | CLASSIFICATION | | | NAT. WC | LL | PL | PI | |
| OW-6 | 60.0 - 60.5' | GM | PINKISH BROWN TILL | | | | | | NASH ROAD SITE |

J. S.
 DANNER & MOORE

GRADATION CURVE

Summary
In-situ Permeability

Well Permeability cm/sec

OW-1 4.37×10^{-4} silt

OW-2 6.75×10^{-4} silt + sand

OW-1B 8.43×10^{-7} till / bedrock

OW-3 1.43×10^{-6} wet zone in t

OW-4 7.88×10^{-7} till / bedrock

OW-5 7.5×10^{-4} till / bedrock

OW-6 6.8×10^{-4} till / bedrock

29

CALIBRATION DATA
Well 1 OWI
A=5.6258E 01
B= 6.4516E-02
D= 0.0000E 00
J0= 272
T0= 81493

ET(sec)= 30
WELL DRAWDOWN
OWI -2.96

ET(sec)= 61
WELL DRAWDOWN
OWI -3.63

ET(sec)= 90
WELL DRAWDOWN
OWI -4.27

ET(sec)= 121
WELL DRAWDOWN
OWI -4.88

ET(sec)= 151
WELL DRAWDOWN
OWI -5.22

ET(sec)= 180
WELL DRAWDOWN
OWI -5.46

ET(sec)= 211
WELL DRAWDOWN
OWI -5.61

ET(sec)= 241
WELL DRAWDOWN
OWI -5.76

ET(sec)= 271
WELL DRAWDOWN
OWI -5.87

ET(sec)= 301
WELL DRAWDOWN
OWI -5.93

ET(sec)= 330
WELL DRAWDOWN
OWI -6.00

ET(sec)= 361
WELL DRAWDOWN
OWI -6.06

ET(sec)= 390
WELL DRAWDOWN
OWI -6.12

ET(sec)= 171
WELL DRAWDOWN

30

ET(sec)= 421
WELL DRAWDOWN
OWI -6.19

ET(sec)= 451
WELL DRAWDOWN
OWI -6.19

ET(sec)= 481
WELL DRAWDOWN
OWI -6.25

ET(sec)= 511
WELL DRAWDOWN
OWI -6.32

ET(sec)= 540
WELL DRAWDOWN
OWI -6.32

ET(sec)= 571
WELL DRAWDOWN
OWI -6.32

ET(sec)= 600
WELL DRAWDOWN
OWI -6.38

ET(sec)= 631
WELL DRAWDOWN
OWI -6.38

ET(sec)= 661
WELL DRAWDOWN
OWI -6.38

ET(sec)= 690
WELL DRAWDOWN
OWI -6.38

ET(sec)= 721
WELL DRAWDOWN
OWI -6.45

ET(sec)= 751
WELL DRAWDOWN
OWI -6.45

ET(sec)= 781
WELL DRAWDOWN
OWI -6.45

ET(sec)= 811
WELL DRAWDOWN
OWI -6.45

ET(sec)= 841
WELL DRAWDOWN
OWI -6.45

ET(sec)= 871
WELL DRAWDOWN
OWI -6.45

ET(sec)= 901
WELL DRAWDOWN
OWI -6.49

31

ET(sec)= 930
WELL DRAWDOWN

OWI -6.51

ET(sec)= 961
WELL DRAWDOWN

OWI -6.51

ET(sec)= 990
WELL DRAWDOWN

OWI -6.51

ET(sec)= 1021
WELL DRAWDOWN

OWI -6.51

ET(sec)= 1051
WELL DRAWDOWN

OWI -6.51

ET(sec)= 1080
WELL DRAWDOWN

OWI -6.51

ET(sec)= 1110
WELL DRAWDOWN

OWI -6.51

ET(sec)= 1141
WELL DRAWDOWN

OWI -6.51

ET(sec)= 1171
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1200
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1231
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1261
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1291
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1320
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1350
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1380
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1410
WELL DRAWDOWN

OWI -6.58

32

ET(sec)= 1280
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1410
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1441
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1471
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1500
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1530
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1561
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1591
WELL DRAWDOWN

OWI -6.58

ET(sec)= 1621
WELL DRAWDOWN

OWI -6.62

ET(sec)= 1651
WELL DRAWDOWN

OWI -6.62

ET(sec)= 1681
WELL DRAWDOWN

OWI -6.64

ET(sec)= 1711
WELL DRAWDOWN

OWI -6.64

ET(sec)= 1741
WELL DRAWDOWN

OWI -6.64

ET(sec)= 1771
WELL DRAWDOWN

OWI -6.64

ET(sec)= 1800
WELL DRAWDOWN

OWI -6.64

ET(sec)= 1830
WELL DRAWDOWN

33

CALIBRATION DATA
Well 1 OWIB
A= -5.6923E 01
B= 6.5279E-02
D= 0.0000E 00

J0= 273
T0= 62293

ET(sec)= 61
WELL DRAWDOWN
OWIB -1.58

ET(sec)= 121
WELL DRAWDOWN
OWIB -1.76

ET(sec)= 180
WELL DRAWDOWN
OWIB -1.89

ET(sec)= 241
WELL DRAWDOWN
OWIB -1.95

ET(sec)= 301
WELL DRAWDOWN
OWIB -2.08

ET(sec)= 361
WELL DRAWDOWN
OWIB -2.19

ET(sec)= 420
WELL DRAWDOWN
OWIB -2.28

ET(sec)= 481
WELL DRAWDOWN
OWIB -2.35

ET(sec)= 541
WELL DRAWDOWN
OWIB -2.48

ET(sec)= 601
WELL DRAWDOWN
OWIB -2.54

ET(sec)= 661
WELL DRAWDOWN
OWIB -2.61

ET(sec)= 721
WELL DRAWDOWN
OWIB -2.74

ET(sec)= 780
WELL DRAWDOWN
OWIB -2.80

ET(sec)= 840
WELL DRAWDOWN
OWIB -2.87

ET(sec)= 900
WELL DRAWDOWN

34

WELL DRAWDOWN

OWIB -2.82

ET(sec)= 980
WELL DRAWDOWN

OWIB -2.93

ET(sec)= 960
WELL DRAWDOWN

OWIB -3.00

ET(sec)= 1021
WELL DRAWDOWN

OWIB -3.06

ET(sec)= 1081
WELL DRAWDOWN

OWIB -3.12

ET(sec)= 1141
WELL DRAWDOWN

OWIB -3.26

ET(sec)= 1200
WELL DRAWDOWN

OWIB -3.32

ET(sec)= 1261
WELL DRAWDOWN

OWIB -3.39

ET(sec)= 1321
WELL DRAWDOWN

OWIB -3.45

ET(sec)= 1381
WELL DRAWDOWN

OWIB -3.52

ET(sec)= 1440
WELL DRAWDOWN

OWIB -3.59

ET(sec)= 1500
WELL DRAWDOWN

OWIB -3.65

ET(sec)= 1561
WELL DRAWDOWN

OWIB -3.72

ET(sec)= 1621
WELL DRAWDOWN

OWIB -3.78

ET(sec)= 1681
WELL DRAWDOWN

OWIB -3.85

ET(sec)= 1741
WELL DRAWDOWN

OWIB -3.91

ET(sec)= 1800
WELL DRAWDOWN

OWIB -3.98

ET(sec)= 1861
WELL DRAWDOWN

OWIB -4.04

35

| WELL | DRAWDOWN |
|--------------|----------|
| OW2 | -7.26 |
| ET(sec)= 533 | |
| WELL | DRAWDOWN |
| OW2 | -7.32 |
| ET(sec)= 560 | |
| WELL | DRAWDOWN |
| OW2 | -7.39 |
| ET(sec)= 586 | |
| WELL | DRAWDOWN |
| OW2 | -7.46 |
| ET(sec)= 612 | |
| WELL | DRAWDOWN |
| OW2 | -7.50 |
| ET(sec)= 638 | |
| WELL | DRAWDOWN |
| OW2 | -7.52 |
| ET(sec)= 665 | |
| WELL | DRAWDOWN |
| OW2 | -7.59 |
| ET(sec)= 691 | |
| WELL | DRAWDOWN |
| OW2 | -7.59 |
| ET(sec)= 717 | |
| WELL | DRAWDOWN |
| OW2 | -7.66 |
| ET(sec)= 743 | |
| WELL | DRAWDOWN |
| OW2 | -7.66 |
| ET(sec)= 769 | |
| WELL | DRAWDOWN |
| OW2 | -7.66 |
| ET(sec)= 796 | |
| WELL | DRAWDOWN |
| OW2 | -7.70 |
| ET(sec)= 822 | |
| WELL | DRAWDOWN |
| OW2 | -7.72 |
| ET(sec)= 848 | |
| WELL | DRAWDOWN |
| OW2 | -7.72 |
| ET(sec)= 874 | |
| WELL | DRAWDOWN |
| OW2 | -7.72 |
| ET(sec)= 900 | |
| WELL | DRAWDOWN |
| OW2 | -7.72 |
| ET(sec)= 926 | |
| WELL | DRAWDOWN |
| OW2 | -7.79 |
| ET(sec)= 952 | |
| WELL | DRAWDOWN |

36

ET(sec)= 1370
WELL DRAWDOWN

OW2 -3.05

ET(sec)= 1396
WELL DRAWDOWN

OW2 -2.85

ET(sec)= 1422
WELL DRAWDOWN

OW2 -2.69

ET(sec)= 1449
WELL DRAWDOWN

OW2 -2.51

ET(sec)= 1475
WELL DRAWDOWN

OW2 -2.31

ET(sec)= 1501
WELL DRAWDOWN

OW2 -2.11

ET(sec)= 1527
WELL DRAWDOWN

OW2 -1.96

ET(sec)= 1554
WELL DRAWDOWN

OW2 -1.78

ET(sec)= 1580
WELL DRAWDOWN

OW2 -1.58

ET(sec)= 1606
WELL DRAWDOWN

OW2 -1.42

ET(sec)= 1633
WELL DRAWDOWN

OW2 -1.24
J0= 273
T0= 59355

ET(sec)= 16
WELL DRAWDOWN

OW2 -0.57

ET(sec)= 12
WELL DRAWDOWN

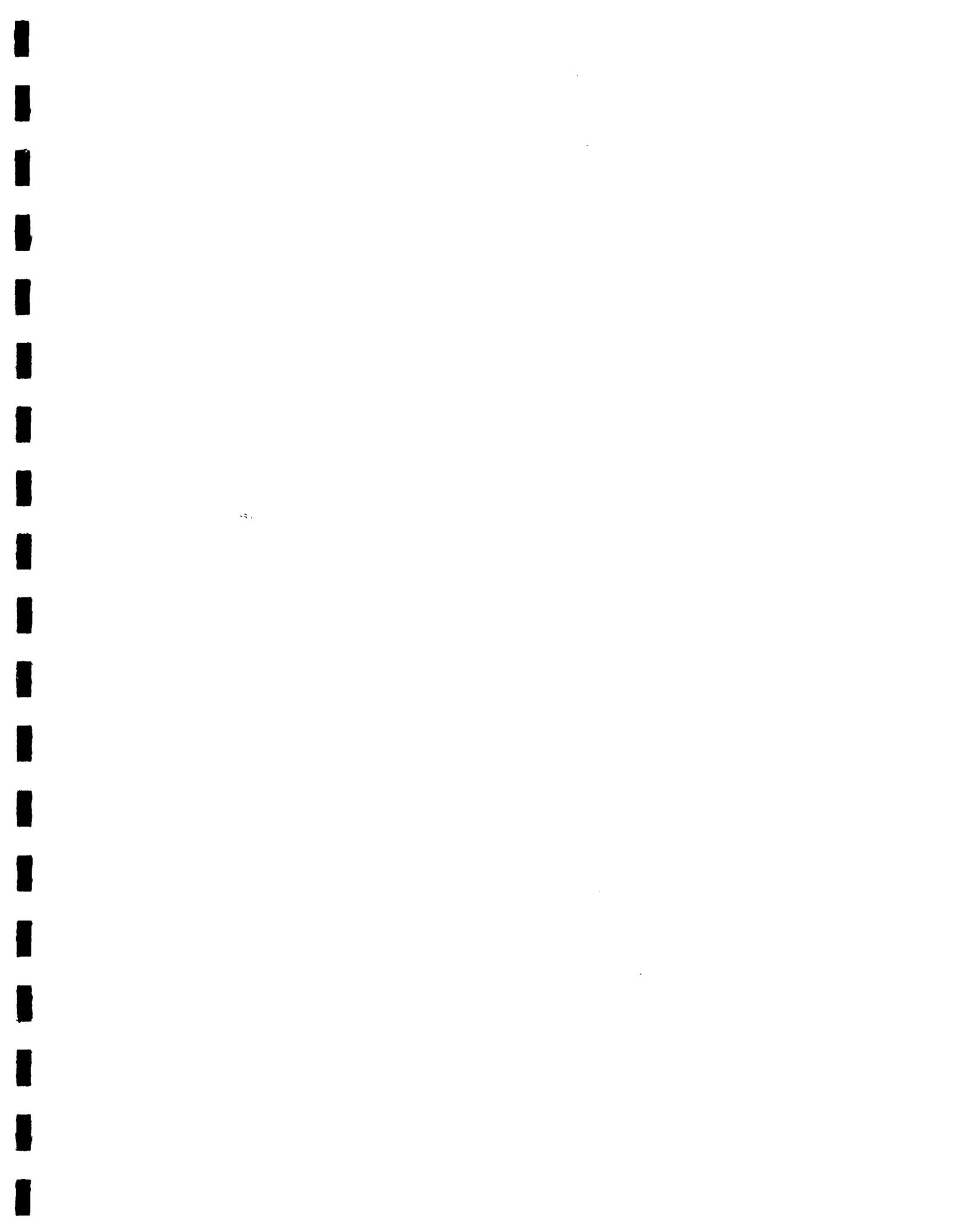
OW2 -0.57

ET(sec)= 68
WELL DRAWDOWN

OW2 -0.57

ET(sec)= 24
WELL DRAWDOWN

37



WELL DRAWDOWN
SW2 -1.15

ET(sec)= 119
WELL DRAWDOWN
OW2 -1.73

ET(sec)= 145
WELL DRAWDOWN
OW2 -2.33

ET(sec)= 171
WELL DRAWDOWN
OW2 " -2.91

ET(sec)= 196
WELL DRAWDOWN
OW2 -3.51

ET(sec)= 222
WELL DRAWDOWN
OW2 -4.12

ET(sec)= 248
WELL DRAWDOWN
OW2 -4.72

ET(sec)= 273
WELL DRAWDOWN
OW2 -5.25

ET(sec)= 299
WELL DRAWDOWN
OW2 -5.65

ET(sec)= 325
WELL DRAWDOWN
OW2 -5.99

ET(sec)= 351
WELL DRAWDOWN
OW2 -6.28

ET(sec)= 377
WELL DRAWDOWN
OW2 -6.52

ET(sec)= 403
WELL DRAWDOWN
OW2 -6.72

ET(sec)= 429
WELL DRAWDOWN
OW2 -6.86

ET(sec)= 455
WELL DRAWDOWN
OW2 -7.01

ET(sec)= 481
WELL DRAWDOWN
OW2 -7.12

ET(sec)= 507
WELL DRAWDOWN
OW2 -7.26

ET(sec)= 533
WELL DRAWDOWN

38

OW2 -7.78

ET(sec)= 922
WELL DRAWDOWN

OW2 -7.72

ET(sec)= 818
WELL DRAWDOWN

OW2 -7.72

ET(sec)= 874
WELL DRAWDOWN

OW2 -7.72

ET(sec)= 900
WELL DRAWDOWN

OW2 -7.72

ET(sec)= 926
WELL DRAWDOWN

OW2 -7.79

ET(sec)= 952
WELL DRAWDOWN

OW2 -7.79

ET(sec)= 979
WELL DRAWDOWN

OW2 -7.79

3

CALIBRATION DATA
 Well 1 OW3
 $A = -6.7066E-01$
 $B = 8.2614E-02$
 $D = 1.5000E+01$
 $J_0 = 272$
 $T_0 = 21820$

ET(sec)= 60
WELL DRAWDOWN
OW3 6.118.8

ET(sec)= 121
WELL DRAWDOWN
DW3 2.93

ET(sec)= 180
WELL DRAWDOWN
0W3 7.85

ET(sec)= 241
WELL DRAWDOWN
0W3 7.26

ET(sec)= 301
WELL DRAWDOWN

ET(sec)= 360
WELL DRAWDOWN
0W3 2.52

ET(sec)= 421
WELL DRAWDOWN
043 2,43

ET(sec)= 481
WELL DRAWDOWN
0W3 2.38

ET(sec)= 541
WELL DRAWDOWN
DOW 2 19

ET(sec) = 500
WELL DRAWDOWN
DWS 2.18

ET(sec)= 661
WELL DRAWDOWN
043 2.82

FT(sec)= 721
WELL DRAWDOWN
DHW 6.81

ET(sec)= 781
WELL DRAWDOWN

ET(sec)= 841
WELL DRAWDOWN

FT(sec)= 900
WELL DRAWDOWN

ET(sec)= 961
WELL DRAWDOWN

ס- ۱۴

ET(sec)= 1021
WELL DRAWDOWN

OW3 6.36

ET(sec)= 1081
WELL DRAWDOWN

OW3 6.28

ET(sec)= 1141
WELL DRAWDOWN

OW3 6.19

ET(sec)= 1200
WELL DRAWDOWN

OW3 6.11

ET(sec)= 1261
WELL DRAWDOWN

OW3 6.36

ET(sec)= 1321
WELL DRAWDOWN

OW3 6.28

ET(sec)= 1381
WELL DRAWDOWN

OW3 6.19

ET(sec)= 1441
WELL DRAWDOWN

OW3 6.11

ET(sec)= 1501
WELL DRAWDOWN

OW3 6.03

ET(sec)= 1561
WELL DRAWDOWN

OW3 5.95

ET(sec)= 1621
WELL DRAWDOWN

OW3 5.86

ET(sec)= 1681
WELL DRAWDOWN

OW3 5.78

ET(sec)= 1741
WELL DRAWDOWN

OW3 5.61

ET(sec)= 1800
WELL DRAWDOWN

OW3 5.61

ET(sec)= 1861
WELL DRAWDOWN

OW3 5.50

ET(sec)= 1921
WELL DRAWDOWN

OW3 5.37

ET(sec)= 1981
WELL DRAWDOWN

OW3 5.37

41

ET(sec)= 1911
WELL DRAWDOWN

OW3 5.37

ET(sec)= 1981
WELL DRAWDOWN

OW3 5.37

ET(sec)= 2041
WELL DRAWDOWN

OW3 5.28

ET(sec)= 2181
WELL DRAWDOWN

OW3 5.15

ET(sec)= 2160
WELL DRAWDOWN

OW3 5.04

ET(sec)= 2228
WELL DRAWDOWN

OW3 4.95

ET(sec)= 2280
WELL DRAWDOWN

OW3 4.87

ET(sec)= 2348
WELL DRAWDOWN

OW3 4.79

ET(sec)= 2400
WELL DRAWDOWN

OW3 4.71

ET(sec)= 2461
WELL DRAWDOWN

OW3 4.62

ET(sec)= 2521
WELL DRAWDOWN

OW3 4.54

ET(sec)= 2581
WELL DRAWDOWN

OW3 4.46

ET(sec)= 2641
WELL DRAWDOWN

OW3 4.38

ET(sec)= 2700
WELL DRAWDOWN

OW3 " 4.29

ET(sec)= 2760
WELL DRAWDOWN

OW3 4.21

ET(sec)= 2821
WELL DRAWDOWN

OW3 4.13

ET(sec)= 2881
WELL DRAWDOWN

OW3 4.04

ET(sec)= 2941

40

ET(sec)= 2110
WELL DRAWDOWN

OW3 4.29

ET(sec)= 2260
WELL DRAWDOWN

OW3 4.21

ET(sec)= 2821
WELL DRAWDOWN

OW3 4.13

ET(sec)= 2881
WELL DRAWDOWN

OW3 4.04

ET(sec)= 2941
WELL DRAWDOWN

OW3 3.96

ET(sec)= 3001
WELL DRAWDOWN

OW3 3.88

ET(sec)= 3061
WELL DRAWDOWN

OW3 3.80

ET(sec)= 3121
WELL DRAWDOWN

OW3 3.71

ET(sec)= 3181
WELL DRAWDOWN

OW3 3.63

ET(sec)= 3241
WELL DRAWDOWN

OW3 3.55

ET(sec)= 3301
WELL DRAWDOWN

OW3 3.47

ET(sec)= 3360
WELL DRAWDOWN

OW3 3.38

ET(sec)= 3421
WELL DRAWDOWN

OW3 3.30

ET(sec)= 3481
WELL DRAWDOWN

OW3 3.22

ET(sec)= 3541
WELL DRAWDOWN

OW3 3.14

ET(sec)= 3601
WELL DRAWDOWN

OW3 3.08

ET(sec)= 3660
WELL DRAWDOWN

43

CALIBRATION DATA
Well 1 OW4
A=-6.1285E 01
B= 2.1428E-02
D= 0.0000E 00
J0= 273
T0= 81079

ET(sec)= 60
WELL DRAWDOWN

OW4 -14.00
-14.00 -14.00

ET(sec)= 121
WELL DRAWDOWN

OW4 -14.21

ET(sec)= 180
WELL DRAWDOWN

OW4 -14.35

ET(sec)= 241
WELL DRAWDOWN

OW4 -14.50

ET(sec)= 300
WELL DRAWDOWN

OW4 -14.64

ET(sec)= 361
WELL DRAWDOWN

OW4 -14.78

ET(sec)= 420
WELL DRAWDOWN

OW4 -14.85

ET(sec)= 481
WELL DRAWDOWN

OW4 -15.00

ET(sec)= 541
WELL DRAWDOWN

OW4 -15.07

ET(sec)= 600
WELL DRAWDOWN

OW4 -15.14

ET(sec)= 661
WELL DRAWDOWN

OW4 -15.21

ET(sec)= 720
WELL DRAWDOWN

OW4 -15.28

ET(sec)= 781
WELL DRAWDOWN

OW4 -15.35

ET(sec)= 841
WELL DRAWDOWN

OW4 -15.42

ET(sec)= 900
WELL DRAWDOWN

OW4 -15.50

ET(sec)= 960
WELL DRAWDOWN

44

0W4 -15.50

ET(sec)= 960
WELL DRAWDOWN

0W4 -15.57

ET(sec)= 1021
WELL DRAWDOWN

0W4 -15.64

ET(sec)= 1081
WELL DRAWDOWN

0W4 -15.64

ET(sec)= 1141
WELL DRAWDOWN

0W4 -15.71

ET(sec)= 1201
WELL DRAWDOWN

0W4 -15.78

ET(sec)= 1261
WELL DRAWDOWN

0W4 -15.85

ET(sec)= 1321
WELL DRAWDOWN

0W4 -15.85

ET(sec)= 1388
WELL DRAWDOWN

0W4 -15.92

ET(sec)= 1448
WELL DRAWDOWN

0W4 -16.00

ET(sec)= 1501
WELL DRAWDOWN

0W4 -16.07

ET(sec)= 1561
WELL DRAWDOWN

0W4 -16.07

ET(sec)= 1621
WELL DRAWDOWN

0W4 -16.14

ET(sec)= 1688
WELL DRAWDOWN

0W4 -16.21

ET(sec)= 1748
WELL DRAWDOWN

0W4 -16.21

ET(sec)= 1801
WELL DRAWDOWN

0W4 -16.28

ET(sec)= 1861
WELL DRAWDOWN

0W4 -16.35

ET(sec)= 1920
WELL DRAWDOWN

0W4 -16.42

45

ET(sec)= 1981
WELL DRAWDOWN
OW4 -16.28

ET(sec)= 1981
WELL DRAWDOWN
OW4 -16.35

ET(sec)= 1978
WELL DRAWDOWN
OW4 -16.42

ET(sec)= 1980
WELL DRAWDOWN
OW4 -16.50

ET(sec)= 2040
WELL DRAWDOWN
OW4 -16.50

ET(sec)= 2100
WELL DRAWDOWN
OW4 -16.57

ET(sec)= 2161
WELL DRAWDOWN
OW4 -16.57

ET(sec)= 2221
WELL DRAWDOWN
OW4 -1.49

ET(sec)= 2280
WELL DRAWDOWN
OW4 -1.35

ET(sec)= 2341
WELL DRAWDOWN
OW4 -1.21

ET(sec)= 2401
WELL DRAWDOWN
OW4 (-0.99)
IT OF 1978
ET(sec)= 2461
WELL DRAWDOWN
OW4 -0.92

46

RECOVERY TEST
7/11/84

WATER LEVEL
IS WATER
ABOUT YOUNGER
TRANSDUCER AT
DEPTH OF 30'

04-5
TIME WATER LEVEL
17.0556 16.7000
17.0611 16.7000
17.0625 16.7000

STAB

17.0933 15.7967
17.0933 16.7645
17.0933 15.2161
17.0933 15.4096
17.0933 15.5387
17.0933 15.6032
17.0933 15.8612
17.0933 15.5387
17.0933 15.6677
17.0933 15.2806
17.0933 14.9580
17.0933 15.1516

17.1122 15.3451
17.1122 15.4741
17.1122 15.6032
17.1122 15.7322
17.1122 15.7967
17.1122 15.9258
17.1247 16.3129
17.1318 16.5709

STAB

{ 17.1512 15.6032
17.1542 16.1838-
17.1613 16.5064-
17.1642 16.6354
17.1712 16.7645
17.1743 16.7645-
17.1812 16.7645
17.1842 16.8290
17.1913 16.8290
17.1942 16.8290
17.2012 16.8290
17.2043 16.8290
17.2112 16.7645
17.2142 16.8290

YOUNGER AT
~35' DOWNS
HOLE

04-6
TIME WATER LEVEL
17.4344 17.7653
17.4354 17.7653
17.4404 17.7653

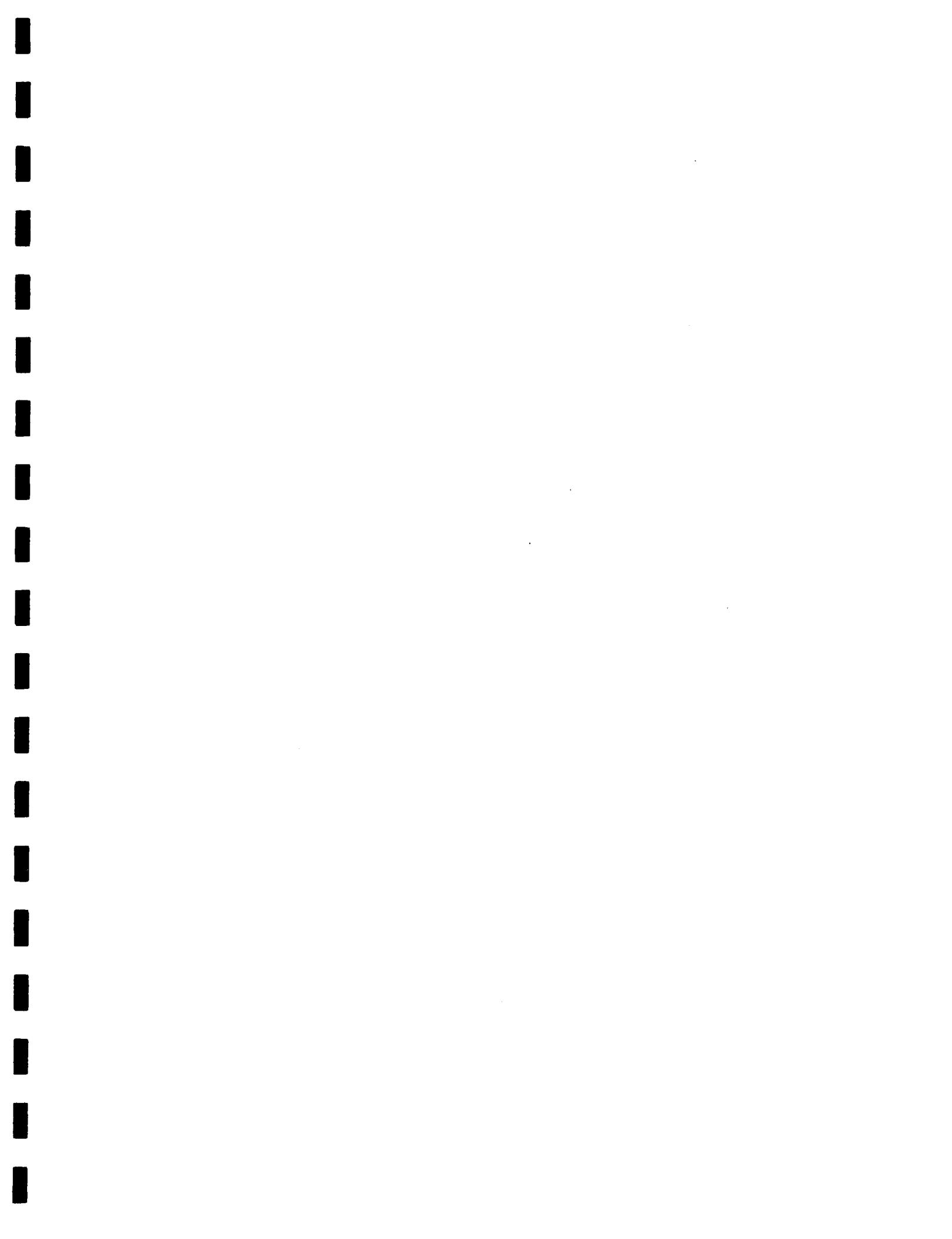
17.4923 15.0202
17.4933 15.8815
17.4944 16.0000

17.5021 15.8045
17.5036 16.0006
17.5051 16.2620
17.5106 16.4581
17.5121 16.5888
17.5136 16.7196
17.5205 17.5432*

* SUSPECT DATA
static = 17.25' sheet up
2.9'

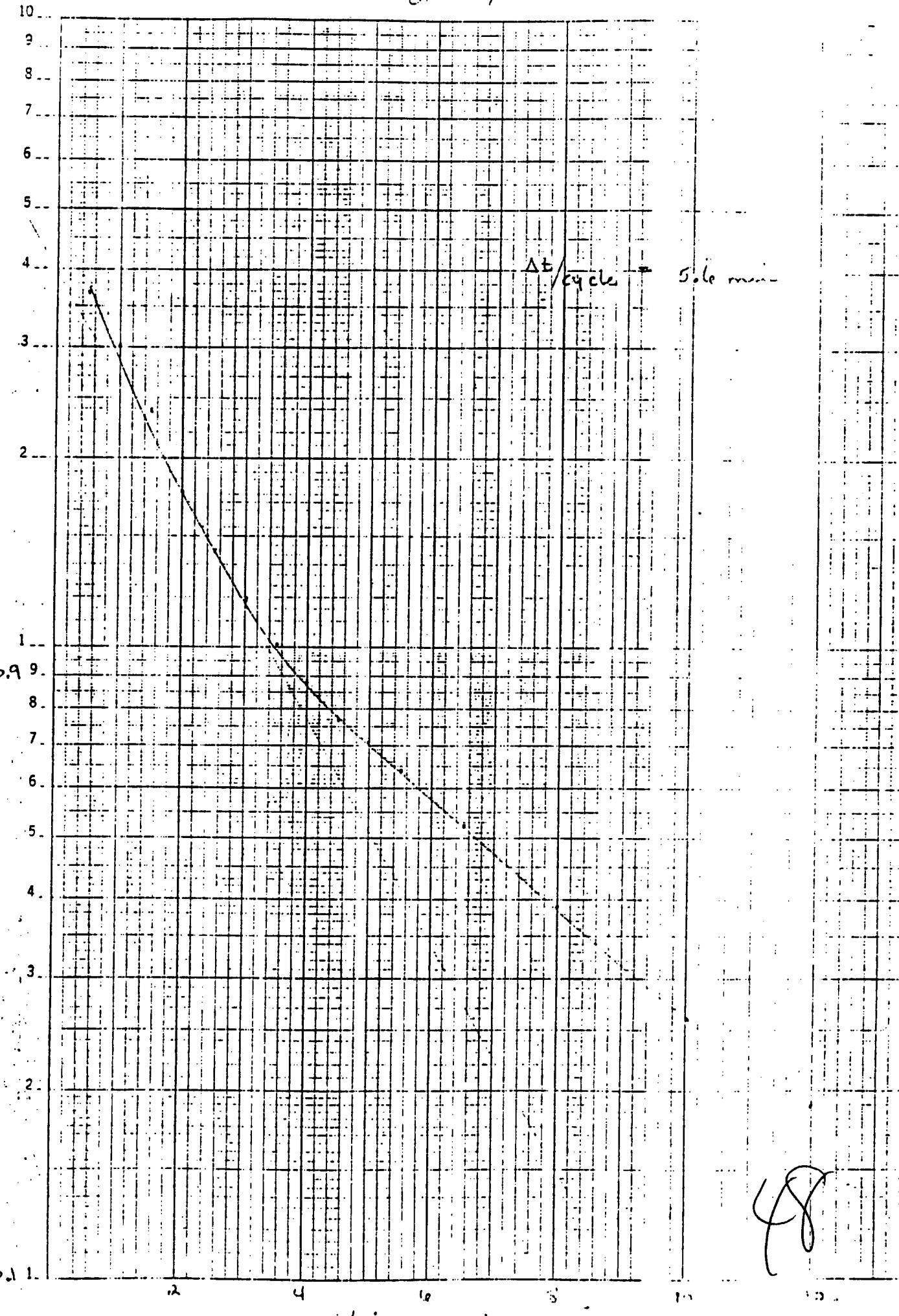
About 143' below
top of casing
S.U. 1.5'

47



Kodak SAFETY FILM
KODAK SAFETY FILM
KODAK SAFETY FILM

4977



KENNEL & ESSER CO.

4652

SEMILOGARITHMIC

5 X 75 DIVISIONS

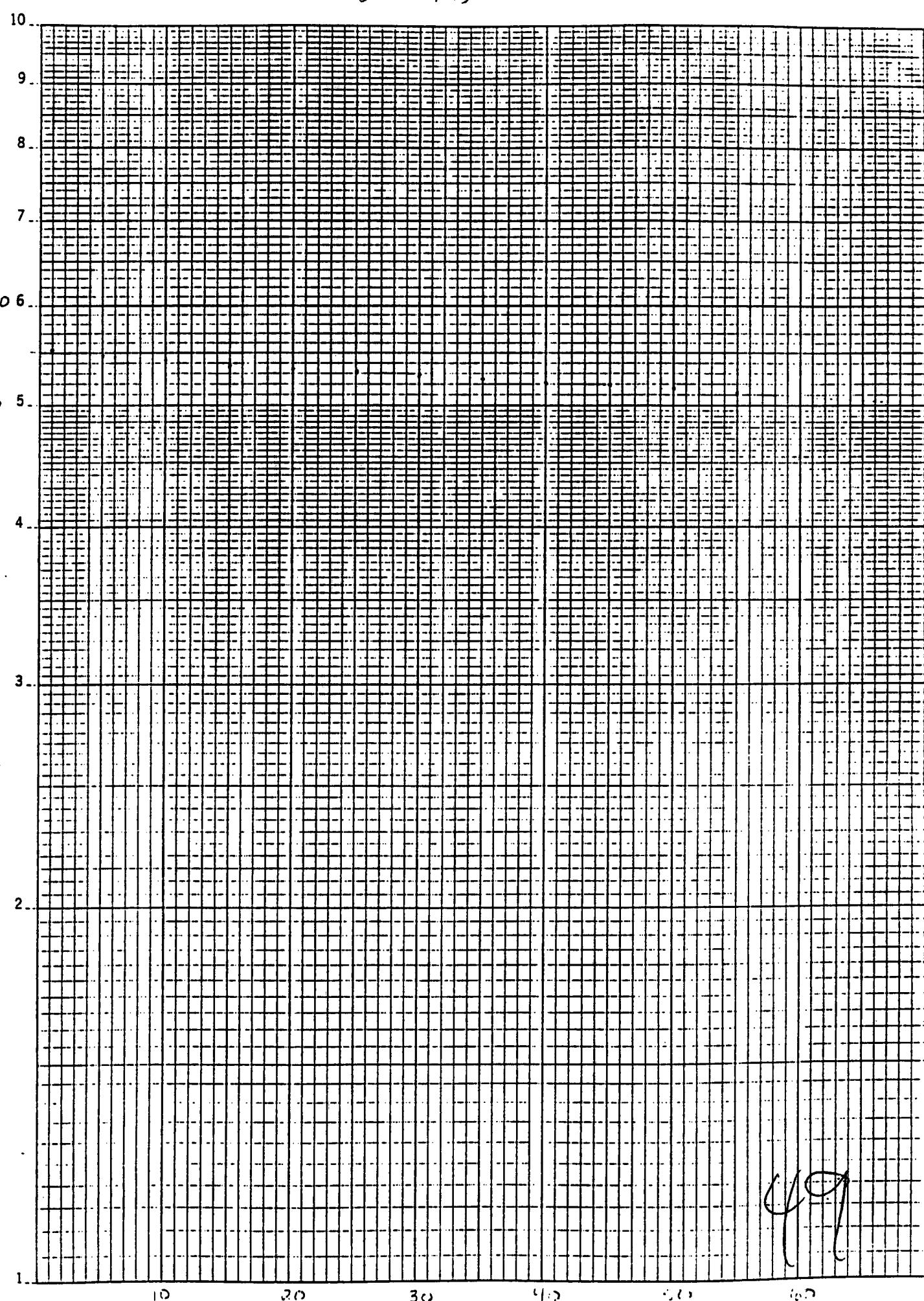
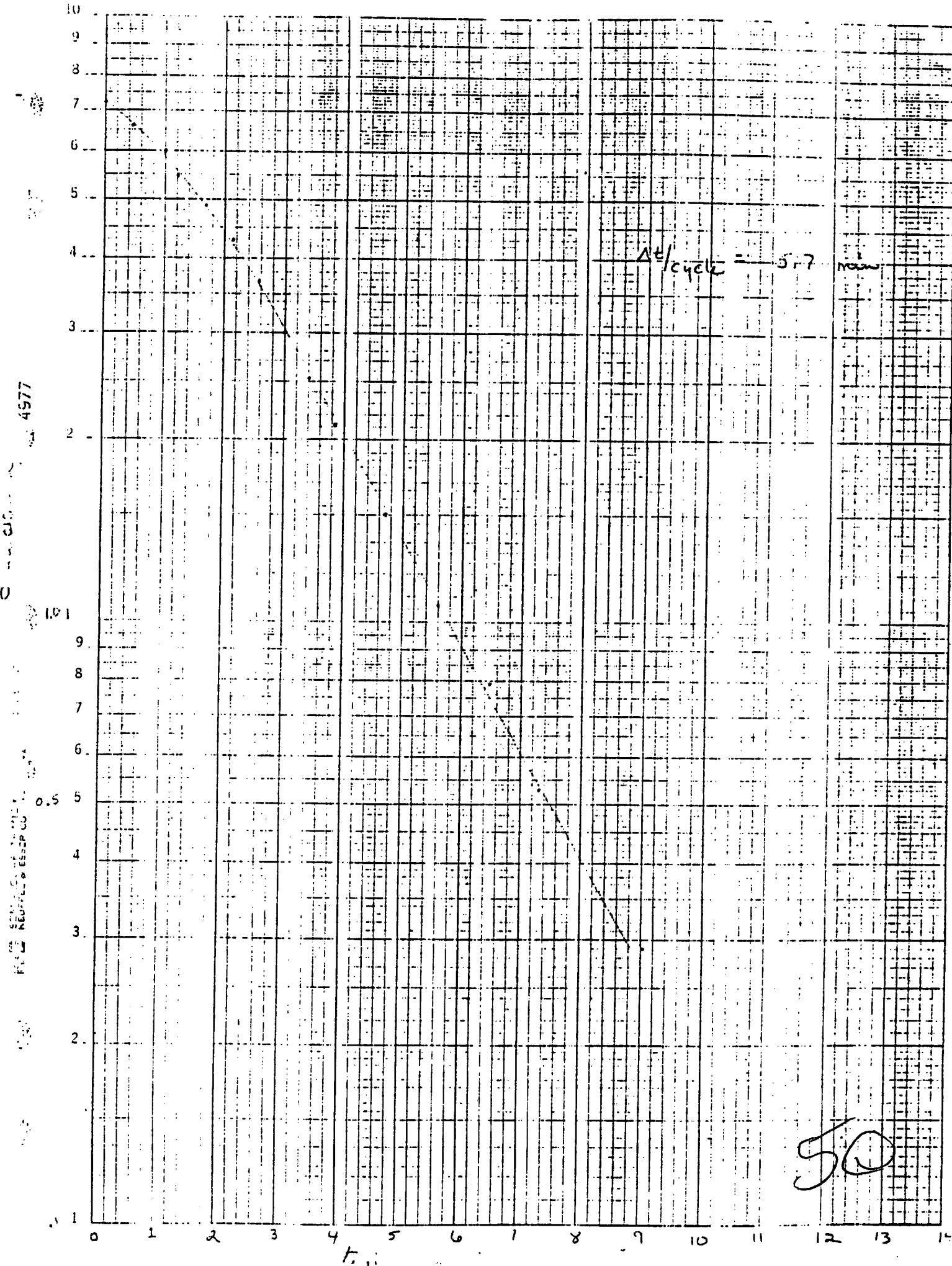
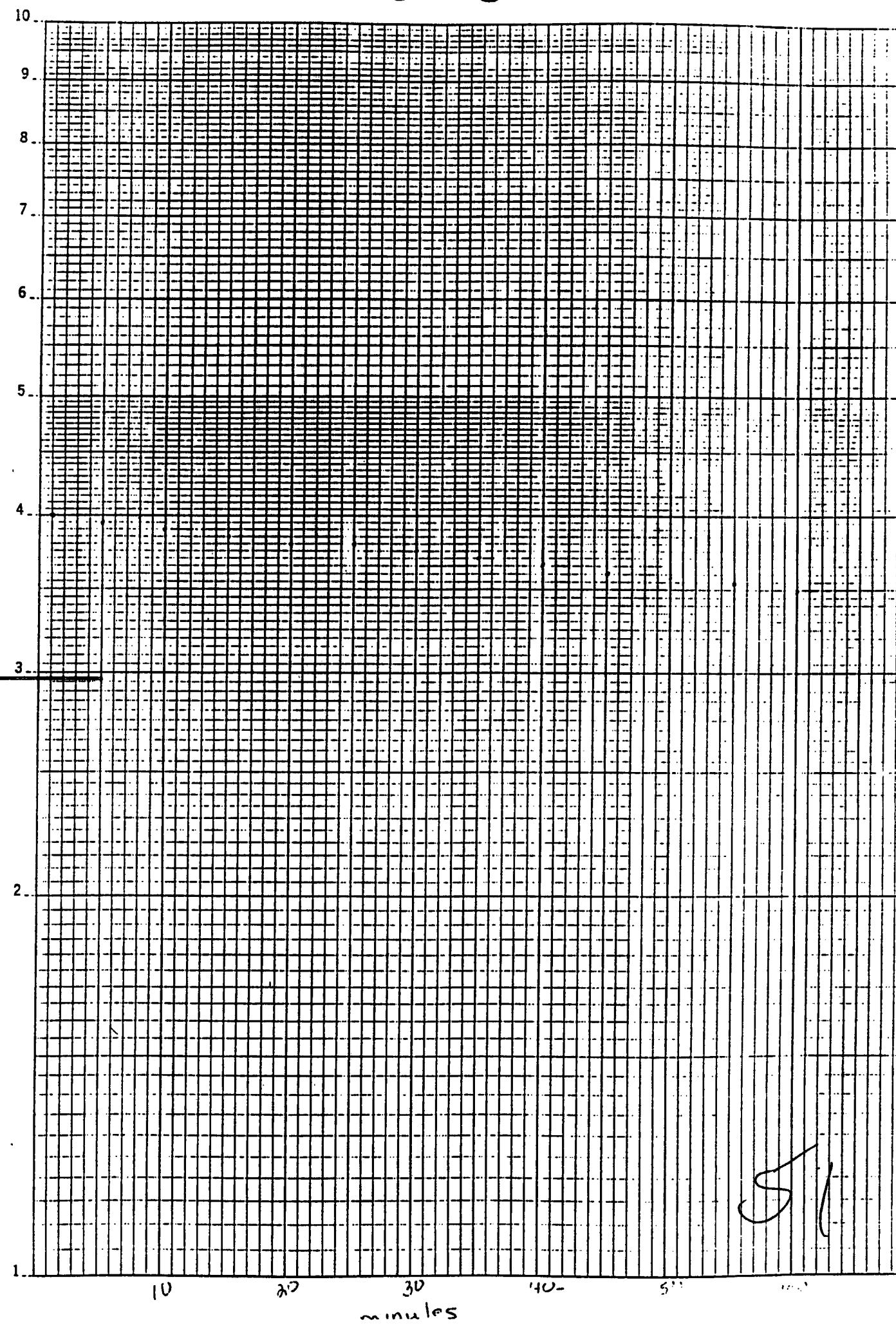


Fig. 2. REFERENCE GROUP



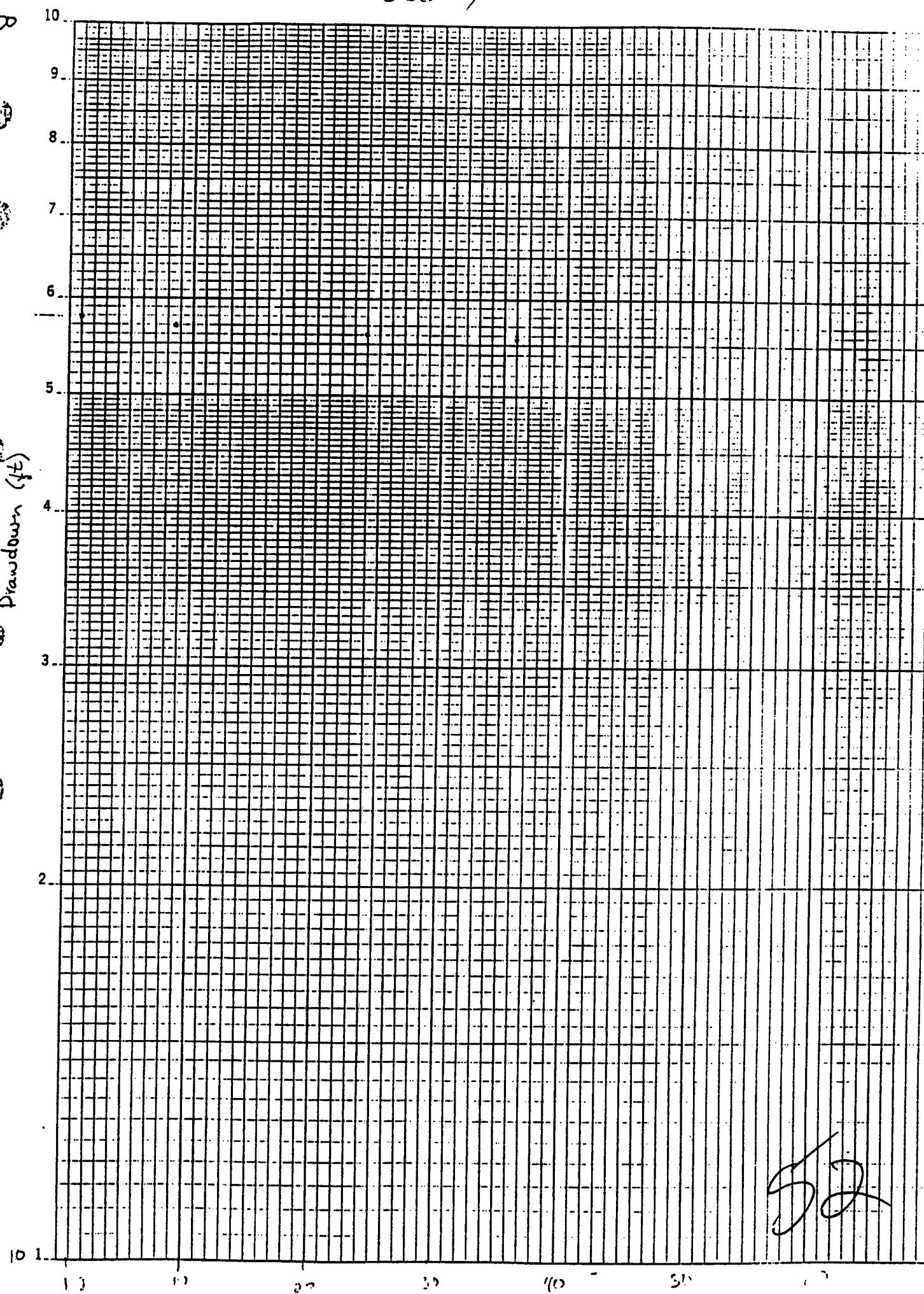
Drawdown, 4652

H-2 SEMI-LOGARITHMIC LOG-X TO DIVISIONS
KEUFFEL & ESSER CO., NEW YORK



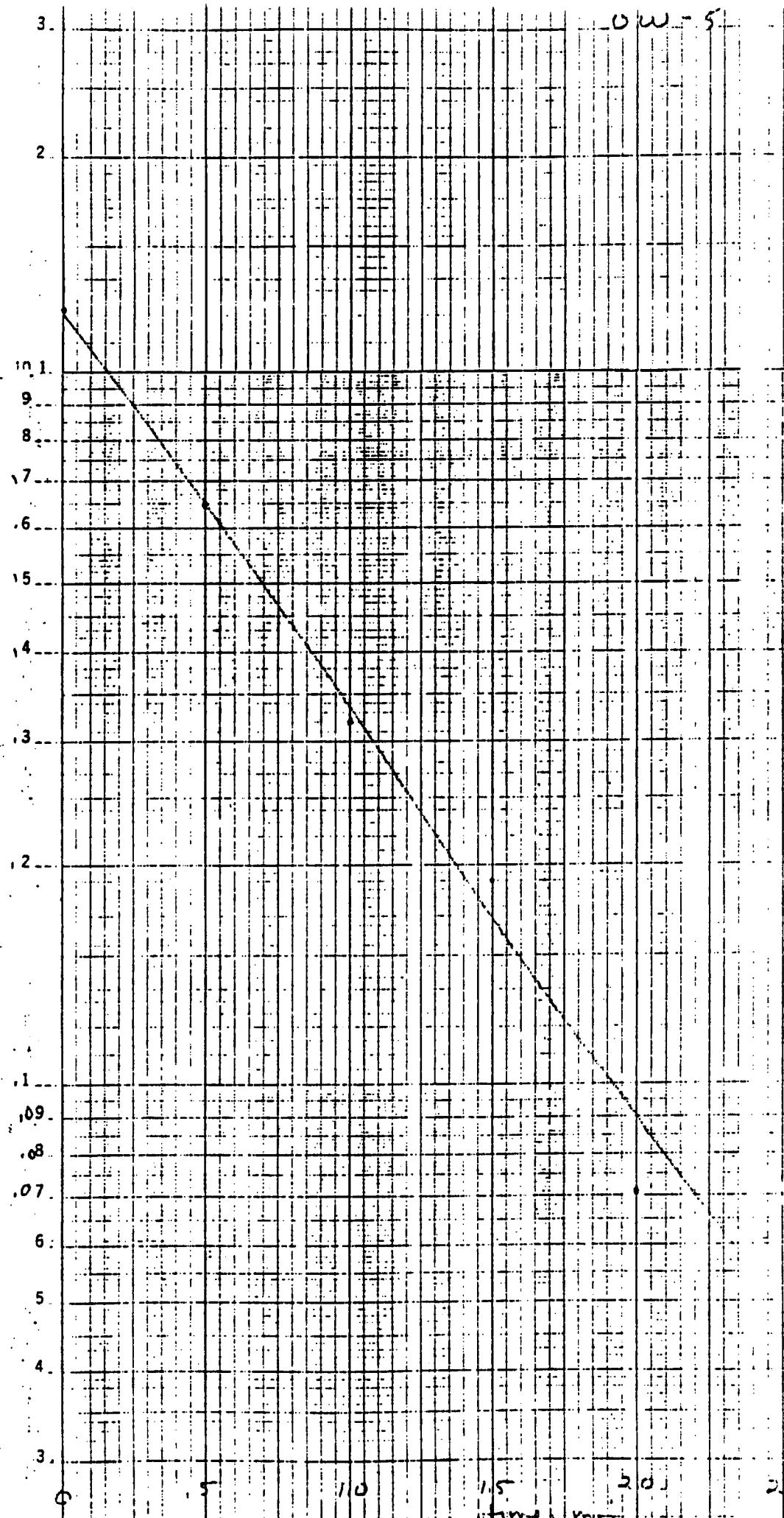
میرزا

K-3 SEMI-LOGARITHMIC 1" X 10 DIVISIONS
KENNEDY & ESSER CO. 4652
Drawdown (ft)



Draughtsmen, 16-97

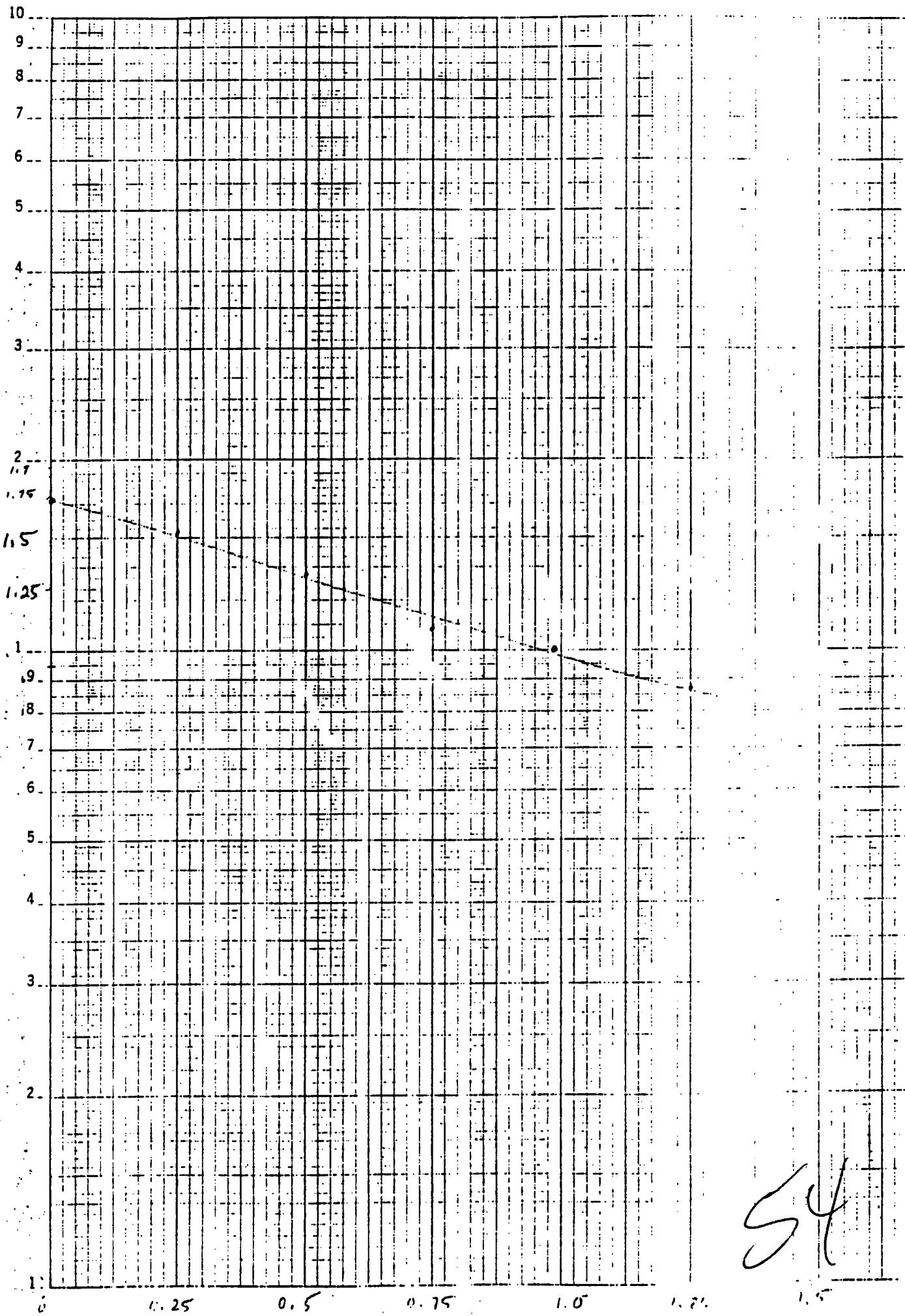
SENECA GRAPHIC CO., CLEVELAND, OHIO
A. E. REED & REED CO., NEW YORK, N.Y.



53

LOGARITHMIC
KELFAL & ESSER CO.

497



ET(sec)= 2801
WELL DRAWDOWN
OWIB -5.02

ET(sec)= 2821
WELL DRAWDOWN
OWIB -5.09

ET(sec)= 2880
WELL DRAWDOWN
OWIB -5.15

ET(sec)= 2941
WELL DRAWDOWN
OWIB -5.22

ET(sec)= 3001
WELL DRAWDOWN
OWIB -5.28

ET(sec)= 3061
WELL DRAWDOWN
OWIB -5.35

ET(sec)= 3121
WELL DRAWDOWN
OWIB -5.41

ET(sec)= 3181
WELL DRAWDOWN
OWIB -5.46

ET(sec)= 3240
WELL DRAWDOWN
OWIB -5.48

ET(sec)= 3308
WELL DRAWDOWN
OWIB -5.54

ET(sec)= 3361
WELL DRAWDOWN
OWIB -5.61

55

assume $m = 1$

$$H_1 = 4 \text{ ft} = 121.9 \text{ cm}$$

$$L = 12 \text{ ft} = 366 \text{ cm} \quad t_1 = 60 \text{ sec}$$

$$D = 12 \text{ cm} \quad H_2 = 3.5 \text{ ft} = 106.7 \text{ cm}$$

$$d = 5 \text{ cm} \quad t_2 = 3600 \text{ sec}$$

$$k_h = \frac{d^2 \ln \left(\frac{4mL}{D} \right)}{8L(t_2 - t_1)} \ln \frac{H_1}{H_2}$$

$$k_h = \frac{(5^2) \ln \left(\frac{4(1)(366)}{17} \right)}{8(366)(3600 - 60)} \ln \left(\frac{121.9}{106.7} \right)$$

$$k_h = \frac{25 (4.4557)}{10365120} (0.1332)$$

$$k_h = 1.43 \times 10^{-6} \text{ cm/sec}$$

Case F

OW-4

assume $m = 1$

$$L = 13 \text{ ft} = 396 \text{ cm}$$

$$\frac{2m}{D} L = \frac{2(1)(396)}{17}$$

$$k = D = 6.75 \text{ in} = 17 \text{ cm}$$

$$d = 2 \text{ in} = 5 \text{ cm}$$

$$pt 2 H_1 = 5.8 \text{ ft} =$$

$$t_1 = 60 \text{ sec}$$

$$H_2 = 5.56 \text{ ft} =$$

$$t_2 = 2160 \text{ sec}$$

$$k_L = \frac{d^2 \ln \left(\frac{4mL}{D} \right)}{8 L (t_2 - t_1)} \ln \frac{H_1}{H_2}$$

$$k_L = \frac{(5)^2 \ln \left(\frac{4(1)(396)}{17} \right)}{8(396)(2160 - 60)} \ln \cancel{14.1} \cancel{17} \frac{1770}{1640}$$

$$\frac{25(4.53)}{6452800} (-.04625) (.04625)$$

113.4

$$j_h = \cancel{3.685670 \times 10^{-7}} \approx 7.88 \times 10^{-7} \text{ cm/sec}$$

57

Case F

QW-5

assume $m = 1$

$$L = 14 \text{ ft} = \cancel{426.7} \text{ cm}$$

$$D = 17 \text{ cm}$$

$$d = 5 \text{ cm}$$

$$k_h = \frac{d^2 \ln \left(\frac{4mL}{D} \right)}{8L(t_2 - t_1)} \ln \left(\frac{H_1}{H_2} \right)$$

$$H_1 = 0.65' = 1$$

$$t_1 = 0.5 \text{ min} = :$$

$$H_2 = \cancel{0.09'} =$$

$$t_2 = 2 \text{ min} = 12$$

$$k_h = \frac{(5^2) \ln \left(\frac{4(1)(427)}{17} \right)}{8(427)(120 - 30)} \ln \left(\frac{19.8}{2.7} \right)$$

$$30744.0 \quad (1.99)$$

$$7.5 \times 10^{-4}$$

SJ

Case 1

OW-LP

$$M = 1$$

$$H_1 - 1.15 = 45$$

$$b = 0.25 = 4$$

$$L = 12.1 = 368.8 \text{ cm}$$

$$H_2 - .87 = 26$$

$$D = 17 \text{ cm}$$

$$t_2 - 1.25 =$$

$$d = 5 \text{ cm}$$

$$k_h = \frac{(25) \ln \left(\frac{4 \cdot 368.8}{17} \right)}{8 \cdot (368.8) \cdot (30)} \left[\ln \frac{45.7}{26.5} \right]$$

$$(111.5), (.54)$$

88512

$$6.8 \times 10^{-4}$$

66.

53.

12

59-

APPENDIX C

GEOPHYSICAL SURVEY DATA

60

SOUNDING 1 NASH ROAD LANDFILL

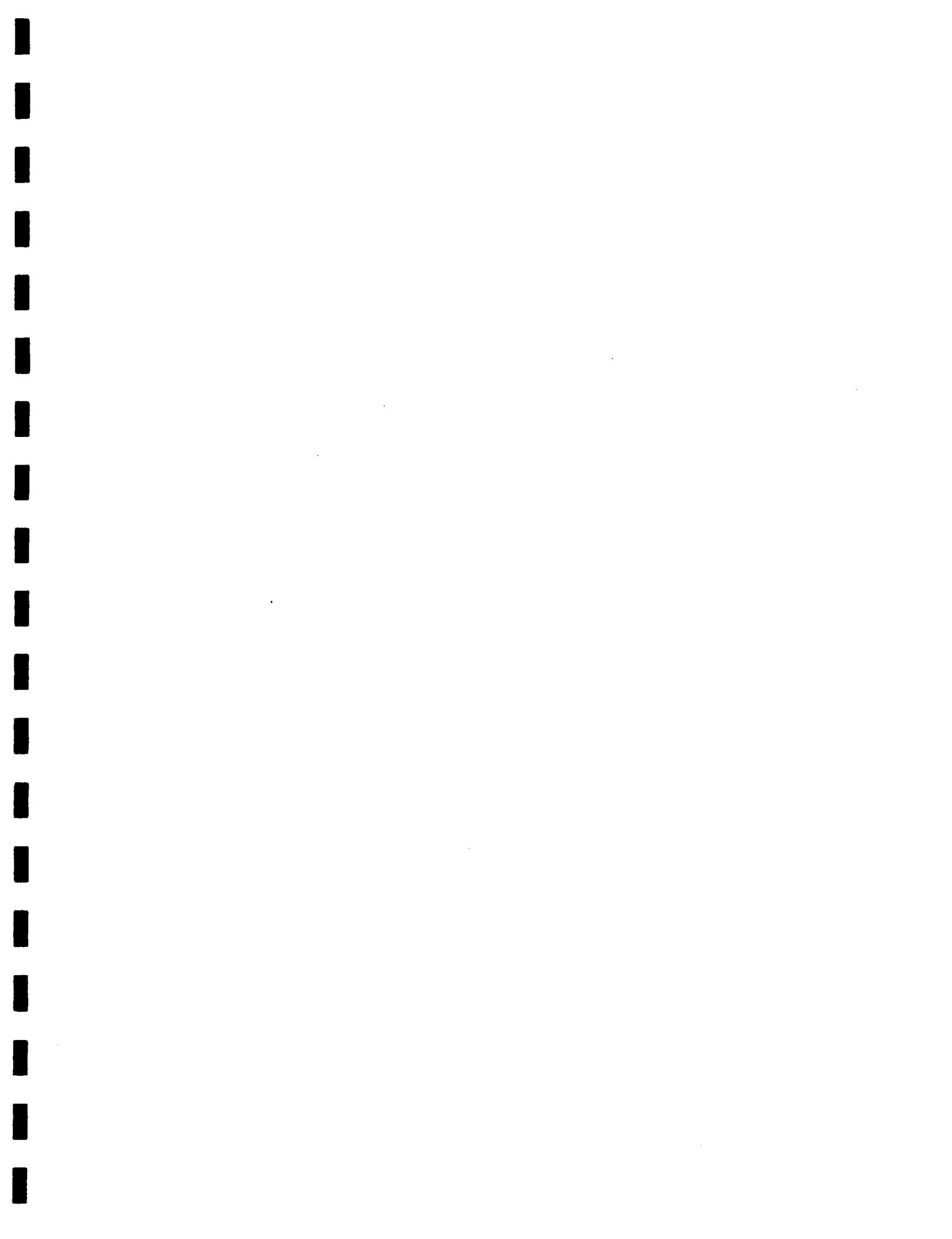
| p-pi spacing (feet) | dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|---------------------------|---------------------------|---------------------|--------------------------------|--------------|-------------------------------------|---------------------------------------|
| 2.00 | 8.50 | 0.10 | 0.85 | 2499.80 | 2124.83 | 2124.83 |
| 4.00 | 19.50 | 0.10 | 1.95 | 1249.50 | 2436.53 | 4561.36 |
| 6.00 | 250.50 | 0.01 | 2.51 | 832.60 | 2085.66 | 6647.02 |
| 8.00 | 30.50 | 0.01 | 0.31 | 624.00 | 190.32 | 6837.34 |
| 10.00 | 40.50 | 0.01 | 0.41 | 498.80 | 202.01 | 7039.35 |
| 12.00 | 484.00 | 0.01 | 4.84 | 415.20 | 2009.57 | 9048.92 |
| 14.00 | 30.00 | 0.10 | 3.00 | 355.40 | 1066.20 | 10115.12 |
| 16.00 | 661.00 | 0.10 | 66.10 | 310.50 | 20524.05 | 30639.17 |
| 18.00 | 752.00 | 0.10 | 75.20 | 275.50 | 20717.60 | 51356.77 |
| 20.00 | 820.50 | 0.10 | 82.05 | 247.50 | 20307.38 | 71664.15 |
| 22.00 | 888.00 | 0.10 | 88.80 | 224.50 | 19935.60 | 91599.75 |
| 24.00 | 90.50 | 0.10 | 9.05 | 205.30 | 1857.97 | 93457.71 |
| 26.00 | 102.00 | 0.10 | 10.20 | 189.10 | 1928.82 | 95386.53 |
| 28.00 | 118.00 | 0.10 | 11.80 | 175.10 | 2066.18 | 97452.71 |
| 30.00 | 106.50 | 0.10 | 10.65 | 162.90 | 1734.89 | 99187.60 |
| 32.00 | 131.00 | 0.10 | 13.10 | 152.30 | 1995.13 | 101182.73 |
| 34.00 | 142.50 | 0.10 | 14.25 | 142.80 | 2034.90 | 103217.63 |
| 36.00 | 155.00 | 0.10 | 15.50 | 134.40 | 2083.20 | 105300.83 |
| 38.00 | 163.50 | 0.10 | 16.35 | 126.80 | 2073.18 | 107374.01 |
| 40.00 | 170.00 | 0.10 | 17.00 | 120.00 | 2040.00 | 109414.01 |
| 42.00 | 179.00 | 0.10 | 17.90 | 113.80 | 2037.02 | 111451.03 |
| 44.00 | 194.00 | 0.10 | 19.40 | 108.10 | 2097.14 | 113548.17 |
| 46.00 | 198.00 | 0.10 | 19.80 | 102.90 | 2037.42 | 115585.59 |
| 48.00 | 209.50 | 0.10 | 20.95 | 98.20 | 2057.29 | 117642.88 |
| 50.00 | 197.50 | 0.10 | 19.75 | 93.80 | 1852.55 | 119495.43 |
| 52.00 | 224.00 | 0.10 | 22.40 | 89.70 | 2009.28 | 121504.71 |
| 54.00 | 233.50 | 0.10 | 23.35 | 85.80 | 2003.43 | 123508.14 |
| 56.00 | 246.00 | 0.10 | 24.60 | 82.30 | 2024.58 | 125532.72 |
| 58.00 | 255.50 | 0.10 | 25.55 | 79.00 | 2018.45 | 127551.17 |
| 60.00 | 268.00 | 0.10 | 26.80 | 75.80 | 2031.44 | 129582.61 |
| 62.00 | 274.00 | 0.10 | 27.40 | 72.90 | 1997.46 | 131580.07 |
| 64.00 | 286.00 | 0.10 | 28.60 | 70.10 | 2004.86 | 133584.93 |
| 66.00 | 296.50 | 0.10 | 29.65 | 67.50 | 2001.38 | 135586.30 |
| 68.00 | 309.00 | 0.10 | 30.90 | 65.00 | 2008.50 | 137594.80 |
| 70.00 | 320.00 | 0.10 | 32.00 | 62.70 | 2006.40 | 139601.20 |
| 72.00 | 330.00 | 0.10 | 33.00 | 60.40 | 1993.20 | 141594.40 |
| 74.00 | 339.00 | 0.10 | 33.90 | 58.30 | 1976.37 | 143570.77 |
| 76.00 | 348.50 | 0.10 | 34.85 | 56.30 | 1962.06 | 145532.83 |
| 78.00 | 361.00 | 0.10 | 36.10 | 54.40 | 1963.84 | 147496.66 |
| 80.00 | 373.00 | 0.10 | 37.30 | 52.50 | 1958.25 | 149454.91 |
| 82.00 | 385.00 | 0.10 | 38.50 | 50.70 | 1951.95 | 151406.87 |
| 84.00 | 395.00 | 0.10 | 39.50 | 49.00 | 1935.50 | 153342.37 |
| 86.00 | 401.00 | 0.10 | 40.10 | 47.40 | 1900.74 | 155243.11 |
| 88.00 | 408.00 | 0.10 | 40.80 | 45.80 | 1868.64 | 157111.75 |
| 90.00 | 419.00 | 0.10 | 41.90 | 44.30 | 1856.17 | 158967.92 |
| 92.00 | 435.00 | 0.10 | 43.50 | 42.80 | 1861.80 | 160829.72 |
| 94.00 | 452.00 | 0.10 | 45.20 | 41.40 | 1871.28 | 162701.00 |
| 96.00 | 471.50 | 0.10 | 47.15 | 40.10 | 1890.72 | 164591.71 |
| 98.00 | 480.00 | 0.10 | 48.00 | 38.80 | 1862.40 | 166454.11 |
| 100.00 | 490.00 | 0.10 | 49.00 | 37.50 | 1837.50 | 168291.61 |

61

SOUNDING 2 NASH ROAD LANDFILL

| p-p1 spacing (feet) | dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|---------------------------|---------------------------|---------------------|--------------------------------|--------------|-------------------------------------|---------------------------------------|
| 2.00 | 2.50 | 0.10 | 0.25 | 2499.80 | 624.95 | 624.95 |
| 4.00 | 1.50 | 0.10 | 0.15 | 1249.50 | 187.43 | 812.38 |
| 6.00 | 2.00 | 0.10 | 0.20 | 832.60 | 166.52 | 978.90 |
| 8.00 | 4.00 | 0.10 | 0.40 | 624.00 | 249.60 | 1228.50 |
| 10.00 | 5.00 | 0.10 | 0.50 | 498.80 | 249.40 | 1477.90 |
| 12.00 | 6.00 | 0.10 | 0.60 | 415.20 | 249.12 | 1727.02 |
| 14.00 | 6.50 | 0.10 | 0.65 | 355.40 | 231.01 | 1958.03 |
| 16.00 | 8.00 | 0.10 | 0.80 | 310.50 | 248.40 | 2206.43 |
| 18.00 | 3.00 | 0.10 | 0.30 | 275.50 | 82.65 | 2289.08 |
| 20.00 | 5.00 | 0.10 | 0.50 | 247.50 | 123.75 | 2412.83 |
| 22.00 | 8.50 | 0.10 | 0.85 | 224.50 | 190.83 | 2603.65 |
| 24.00 | 10.50 | 0.10 | 1.05 | 205.30 | 215.57 | 2819.22 |
| 26.00 | 12.00 | 0.10 | 1.20 | 189.10 | 226.92 | 3046.14 |
| 28.00 | 12.00 | 0.10 | 1.20 | 175.10 | 210.12 | 3256.26 |
| 30.00 | 12.50 | 0.10 | 1.25 | 162.90 | 203.63 | 3459.88 |
| 32.00 | 13.50 | 0.10 | 1.35 | 152.30 | 205.61 | 3665.49 |
| 34.00 | 14.50 | 0.10 | 1.45 | 142.80 | 207.06 | 3872.55 |
| 36.00 | 16.50 | 0.10 | 1.65 | 134.40 | 221.76 | 4094.31 |
| 38.00 | 15.00 | 0.10 | 1.50 | 126.80 | 190.20 | 4284.51 |
| 40.00 | 16.50 | 0.10 | 1.65 | 120.00 | 198.00 | 4482.51 |
| 42.00 | 17.00 | 0.10 | 1.70 | 113.80 | 193.46 | 4675.97 |
| 44.00 | 17.50 | 0.10 | 1.75 | 108.10 | 189.18 | 4865.14 |
| 46.00 | 18.50 | 0.10 | 1.85 | 102.90 | 190.37 | 5055.51 |
| 48.00 | 20.00 | 0.10 | 2.00 | 98.20 | 196.40 | 5251.91 |
| 50.00 | 20.50 | 0.10 | 2.05 | 93.80 | 192.29 | 5444.20 |
| 52.00 | 20.50 | 0.10 | 2.05 | 89.70 | 183.89 | 5628.08 |
| 54.00 | 22.50 | 0.10 | 2.25 | 85.80 | 193.05 | 5821.13 |
| 56.00 | 23.50 | 0.10 | 2.35 | 82.30 | 193.41 | 6014.54 |
| 58.00 | 24.50 | 0.10 | 2.45 | 79.00 | 193.55 | 6208.09 |
| 60.00 | 25.50 | 0.10 | 2.55 | 75.80 | 193.29 | 6401.38 |
| 62.00 | 25.00 | 0.10 | 2.50 | 72.90 | 182.25 | 6583.63 |
| 64.00 | 25.50 | 0.10 | 2.55 | 70.10 | 178.76 | 6762.38 |
| 66.00 | 27.50 | 0.10 | 2.75 | 67.50 | 185.63 | 6948.01 |
| 68.00 | 28.50 | 0.10 | 2.85 | 65.00 | 185.25 | 7133.26 |
| 70.00 | 27.50 | 0.10 | 2.75 | 62.70 | 172.43 | 7305.68 |
| 72.00 | 30.50 | 0.10 | 3.05 | 60.40 | 184.22 | 7489.90 |
| 74.00 | 32.50 | 0.10 | 3.25 | 58.30 | 189.48 | 7679.38 |
| 76.00 | 33.00 | 0.10 | 3.30 | 56.30 | 185.79 | 7865.17 |
| 78.00 | 35.00 | 0.10 | 3.50 | 54.40 | 190.40 | 8055.57 |
| 80.00 | 35.50 | 0.10 | 3.55 | 52.50 | 186.38 | 8241.94 |
| 82.00 | 37.00 | 0.10 | 3.70 | 50.70 | 187.59 | 8429.53 |
| 84.00 | 37.50 | 0.10 | 3.75 | 49.00 | 183.75 | 8613.28 |
| 86.00 | 38.00 | 0.10 | 3.80 | 47.40 | 180.12 | 8793.40 |
| 88.00 | 39.00 | 0.10 | 3.90 | 45.80 | 178.62 | 8972.02 |
| 90.00 | 40.50 | 0.10 | 4.05 | 44.30 | 179.42 | 9151.44 |
| 92.00 | 41.50 | 0.10 | 4.15 | 42.80 | 177.62 | 9329.06 |
| 94.00 | 42.50 | 0.10 | 4.25 | 41.40 | 175.95 | 9505.01 |
| 96.00 | 43.50 | 0.10 | 4.35 | 40.10 | 174.44 | 9679.44 |
| 98.00 | 45.00 | 0.10 | 4.50 | 38.80 | 174.60 | 9854.04 |
| 100.00 | 46.50 | 0.10 | 4.65 | 37.50 | 174.38 | 10028.42 |

62



SOUNDING 3 NASH ROAD LANDFILL

| p-p1 spacing (feet) | dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|---------------------------|---------------------------|---------------------|--------------------------------|--------------|-------------------------------------|---------------------------------------|
| 2.00 | 9.00 | 0.01 | 0.09 | 2499.80 | 224.98 | 224.98 |
| 4.00 | 16.50 | 0.01 | 0.17 | 1249.50 | 206.17 | 431.15 |
| 6.00 | 25.00 | 0.01 | 0.25 | 832.60 | 208.15 | 639.30 |
| 8.00 | 32.00 | 0.01 | 0.32 | 624.00 | 199.68 | 838.98 |
| 10.00 | 41.00 | 0.01 | 0.41 | 498.80 | 204.51 | 1043.49 |
| 12.00 | 51.00 | 0.01 | 0.51 | 415.20 | 211.75 | 1255.24 |
| 14.00 | 55.00 | 0.01 | 0.55 | 355.40 | 195.47 | 1450.71 |
| 16.00 | 65.00 | 0.01 | 0.65 | 310.50 | 201.83 | 1652.53 |
| 18.00 | 75.50 | 0.01 | 0.76 | 275.50 | 208.00 | 1860.54 |
| 20.00 | 82.00 | 0.01 | 0.82 | 247.50 | 202.95 | 2063.49 |
| 22.00 | 89.50 | 0.01 | 0.90 | 224.50 | 200.93 | 2264.41 |
| 24.00 | 83.50 | 0.01 | 0.84 | 205.30 | 171.43 | 2435.84 |
| 26.00 | 102.00 | 0.01 | 1.02 | 189.10 | 192.88 | 2628.72 |
| 28.00 | 112.00 | 0.01 | 1.12 | 175.10 | 196.11 | 2824.83 |
| 30.00 | 120.00 | 0.01 | 1.20 | 162.90 | 195.48 | 3020.31 |
| 32.00 | 128.00 | 0.01 | 1.28 | 152.30 | 194.94 | 3215.26 |
| 34.00 | 138.50 | 0.01 | 1.39 | 142.80 | 197.78 | 3413.04 |
| 36.00 | 147.00 | 0.01 | 1.47 | 134.40 | 197.57 | 3610.60 |
| 38.00 | 155.50 | 0.01 | 1.56 | 126.80 | 197.17 | 3807.78 |
| 40.00 | 166.00 | 0.01 | 1.66 | 120.00 | 199.20 | 4006.98 |
| 42.00 | 175.50 | 0.01 | 1.76 | 113.80 | 199.72 | 4206.70 |
| 44.00 | 184.00 | 0.01 | 1.84 | 108.10 | 198.90 | 4405.60 |
| 46.00 | 193.50 | 0.01 | 1.94 | 102.90 | 199.11 | 4604.71 |
| 48.00 | 201.00 | 0.01 | 2.01 | 98.20 | 197.38 | 4802.09 |
| 50.00 | 213.00 | 0.01 | 2.13 | 93.80 | 199.79 | 5001.89 |
| 52.00 | 221.50 | 0.01 | 2.22 | 89.70 | 198.69 | 5200.57 |
| 54.00 | 231.00 | 0.01 | 2.31 | 85.80 | 198.20 | 5398.77 |
| 56.00 | 239.50 | 0.01 | 2.40 | 82.30 | 197.11 | 5595.88 |
| 58.00 | 248.00 | 0.01 | 2.48 | 79.00 | 195.92 | 5791.80 |
| 60.00 | 258.00 | 0.01 | 2.58 | 75.80 | 195.56 | 5987.36 |
| 62.00 | 268.00 | 0.01 | 2.68 | 72.90 | 195.37 | 6182.74 |
| 64.00 | 276.50 | 0.01 | 2.77 | 70.10 | 193.83 | 6376.56 |
| 66.00 | 285.50 | 0.01 | 2.86 | 67.50 | 192.71 | 6569.28 |
| 68.00 | 297.00 | 0.01 | 2.97 | 65.00 | 193.05 | 6762.33 |
| 70.00 | 308.50 | 0.01 | 3.09 | 62.70 | 193.43 | 6955.76 |
| 72.00 | 317.00 | 0.01 | 3.17 | 60.40 | 191.47 | 7147.22 |
| 74.00 | 329.00 | 0.01 | 3.29 | 58.30 | 191.81 | 7339.03 |
| 76.00 | 340.00 | 0.01 | 3.40 | 56.30 | 191.42 | 7530.45 |
| 78.00 | 349.00 | 0.01 | 3.49 | 54.40 | 189.86 | 7720.31 |
| 80.00 | 359.00 | 0.01 | 3.59 | 52.50 | 188.48 | 7908.78 |
| 82.00 | 370.00 | 0.01 | 3.70 | 50.70 | 187.59 | 8096.37 |
| 84.00 | 382.00 | 0.01 | 3.82 | 49.00 | 187.18 | 8283.55 |
| 86.00 | 395.00 | 0.01 | 3.95 | 47.40 | 187.23 | 8470.78 |
| 88.00 | 408.00 | 0.01 | 4.08 | 45.80 | 186.86 | 8657.65 |
| 90.00 | 420.00 | 0.01 | 4.20 | 44.30 | 186.06 | 8843.71 |
| 92.00 | 431.50 | 0.01 | 4.32 | 42.80 | 184.68 | 9028.39 |
| 94.00 | 443.00 | 0.01 | 4.43 | 41.40 | 183.40 | 9211.79 |
| 96.00 | 456.50 | 0.01 | 4.57 | 40.10 | 183.06 | 9394.85 |
| 98.00 | 468.00 | 0.01 | 4.68 | 38.80 | 181.58 | 9576.43 |
| 100.00 | 484.00 | 0.01 | 4.84 | 37.50 | 181.50 | 9757.93 |

63

SOUNDING 4 NASH ROAD LANDFILL

| | dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|-------|---------------------------|---------------------|--------------------------------|--------------|-------------------------------------|---------------------------------------|
| 2.00 | 5.50 | 0.10 | 0.55 | 224.80 | 123.64 | 123.64 |
| 4.00 | 10.50 | 0.10 | 1.05 | 112.00 | 117.60 | 241.24 |
| 6.00 | 12.50 | 0.10 | 1.25 | 74.30 | 92.88 | 334.12 |
| 8.00 | 183.00 | 0.01 | 1.83 | 55.30 | 101.20 | 435.31 |
| 10.00 | 248.50 | 0.01 | 2.49 | 43.80 | 108.84 | 544.16 |
| 12.00 | 227.00 | 0.01 | 2.27 | 36.00 | 81.72 | 625.88 |
| 14.00 | 342.00 | 0.01 | 3.42 | 30.40 | 103.97 | 729.85 |
| 16.00 | 16.50 | 0.10 | 1.65 | 26.10 | 43.07 | 772.91 |
| 18.00 | 39.00 | 0.10 | 3.90 | 22.80 | 88.92 | 861.83 |
| 20.00 | 52.00 | 0.10 | 5.20 | 20.00 | 104.00 | 965.83 |
| 22.00 | 58.00 | 0.10 | 5.80 | 17.70 | 102.66 | 1068.82 |
| 24.00 | 63.50 | 0.10 | 6.35 | 15.80 | 100.33 | 1168.82 |
| 26.00 | 79.00 | 0.10 | 7.90 | 14.10 | 111.39 | 1280.21 |
| 28.00 | 89.00 | 0.10 | 8.90 | 12.60 | 112.14 | 1392.35 |
| 30.00 | 97.00 | 0.10 | 9.70 | 11.30 | 109.61 | 1501.96 |

SOUNDING 5 NASH ROAD LANDFILL

| | dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|-------|---------------------------|---------------------|--------------------------------|--------------|-------------------------------------|---------------------------------------|
| 2.00 | 45.00 | 0.01 | 0.45 | 224.80 | 101.16 | 101.16 |
| 4.00 | 85.50 | 0.01 | 0.86 | 112.00 | 95.76 | 196.92 |
| 6.00 | 159.50 | 0.01 | 1.60 | 74.30 | 118.51 | 315.43 |
| 8.00 | 224.50 | 0.01 | 2.25 | 55.30 | 124.15 | 439.58 |
| 10.00 | 23.00 | 0.10 | 2.30 | 43.80 | 100.74 | 540.32 |
| 12.00 | 309.00 | 0.01 | 3.09 | 36.00 | 111.24 | 651.56 |
| 14.00 | 401.00 | 0.01 | 4.01 | 30.40 | 121.90 | 773.46 |
| 16.00 | 490.00 | 0.01 | 4.90 | 26.10 | 127.89 | 901.35 |
| 18.00 | 573.00 | 0.01 | 5.73 | 22.80 | 130.64 | 1032.00 |
| 20.00 | 63.50 | 0.10 | 6.35 | 20.00 | 127.00 | 1159.00 |
| 22.00 | 70.50 | 0.10 | 7.05 | 17.70 | 124.79 | 1283.78 |
| 24.00 | 79.50 | 0.10 | 7.95 | 15.80 | 125.61 | 1409.39 |
| 26.00 | 92.00 | 0.10 | 9.20 | 14.10 | 129.72 | 1539.11 |
| 28.00 | 97.00 | 0.10 | 9.70 | 12.60 | 122.22 | 1661.33 |
| 30.00 | 86.50 | 0.10 | 8.65 | 11.30 | 97.75 | 1759.08 |

64

SOUNDING 6 NASH ROAD LANDFILL

| dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|---------------------------|---------------------|--------------------------------|--------------|-------------------------------------|---------------------------------------|
| 2.00 | 2.00 | 0.10 | 0.20 | 224.80 | 44.96 |
| 4.00 | 88.00 | 0.01 | 0.88 | 112.00 | 98.56 |
| 6.00 | 140.50 | 0.01 | 1.41 | 74.30 | 143.52 |
| 8.00 | 195.50 | 0.01 | 1.96 | 55.30 | 247.91 |
| 10.00 | 20.00 | 0.10 | 2.00 | 43.80 | 356.02 |
| 12.00 | 29.50 | 0.10 | 2.95 | 36.00 | 443.62 |
| 14.00 | 36.50 | 0.10 | 3.65 | 30.40 | 549.82 |
| 16.00 | 43.50 | 0.10 | 4.35 | 26.10 | 660.78 |
| 18.00 | 51.00 | 0.10 | 5.10 | 22.80 | 774.32 |
| 20.00 | 48.50 | 0.10 | 4.85 | 20.00 | 890.60 |
| 22.00 | 61.00 | 0.10 | 6.10 | 17.70 | 987.60 |
| 24.00 | 69.50 | 0.10 | 6.95 | 15.80 | 1095.57 |
| 26.00 | 79.00 | 0.10 | 7.90 | 14.10 | 1205.38 |
| 28.00 | 88.50 | 0.10 | 8.85 | 12.60 | 1316.77 |
| 30.00 | 98.50 | 0.10 | 9.85 | 11.30 | 1428.28 |
| | | | | | 1539.58 |

SOUNDING 7 NASH ROAD LANDFILL

| dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|---------------------------|---------------------|--------------------------------|--------------|-------------------------------------|---------------------------------------|
| 2.00 | 0.00 | 0.00 | 0.00 | 224.80 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 112.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 74.30 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 55.30 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 43.80 | 0.00 |
| 12.00 | 0.00 | 0.00 | 0.00 | 36.00 | 0.00 |
| 14.00 | .40.50 | 0.10 | 4.05 | 30.40 | 123.12 |
| 16.00 | 44.00 | 0.10 | 4.40 | 26.10 | 114.84 |
| 18.00 | 53.00 | 0.10 | 5.30 | 22.80 | 120.84 |
| 20.00 | 59.00 | 0.10 | 5.90 | 20.00 | 118.00 |
| 22.00 | 667.00 | 0.01 | 6.67 | 17.70 | 118.06 |
| 24.00 | 0.00 | 0.00 | 0.00 | 15.80 | 594.86 |
| 26.00 | 0.00 | 0.00 | 0.00 | 14.10 | 594.86 |
| 28.00 | 0.00 | 0.00 | 0.00 | 12.60 | 594.86 |
| 30.00 | 0.00 | 0.00 | 0.00 | 11.30 | 594.86 |

65

SOUNDING 10 NASH ROAD LANDFILL

| dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|---------------------------|---------------------|--------------------------------|--------------|-------------------------------------|---------------------------------------|
| 2.00 | 0.00 | 0.00 | 224.80 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 112.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 74.30 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 55.30 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 43.80 | 0.00 | 0.00 |
| 12.00 | 302.00 | 0.01 | 3.02 | 36.00 | 108.72 |
| 14.00 | 356.00 | 0.01 | 3.56 | 30.40 | 108.22 |
| 16.00 | 426.00 | 0.01 | 4.26 | 26.10 | 111.19 |
| 18.00 | 482.00 | 0.01 | 4.82 | 22.80 | 109.90 |
| 20.00 | 547.50 | 0.01 | 5.48 | 20.00 | 109.50 |
| 22.00 | 622.00 | 0.01 | 6.22 | 17.70 | 110.09 |
| 24.00 | 0.00 | 0.00 | 0.00 | 15.80 | 657.62 |
| 26.00 | 0.00 | 0.00 | 0.00 | 14.10 | 657.62 |
| 28.00 | 0.00 | 0.00 | 0.00 | 12.60 | 657.62 |
| 30.00 | 0.00 | 0.00 | 0.00 | 11.30 | 657.62 |

SOUNDING 11 NASH ROAD LANDFILL

| dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent- resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|---------------------------|---------------------|--------------------------------|--------------|--------------------------------------|---------------------------------------|
| 2.00 | 0.00 | 0.00 | 224.80 | 0.00 | 0.00 |
| 4.00 | 0.00 | 0.00 | 112.00 | 0.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 74.30 | 0.00 | 0.00 |
| 8.00 | 0.00 | 0.00 | 55.30 | 0.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 43.80 | 0.00 | 0.00 |
| 12.00 | 310.50 | 0.01 | 3.11 | 36.00 | 111.78 |
| 14.00 | 366.00 | 0.01 | 3.66 | 30.40 | 111.26 |
| 16.00 | 414.00 | 0.01 | 4.14 | 26.10 | 108.05 |
| 18.00 | 481.50 | 0.01 | 4.82 | 22.80 | 109.78 |
| 20.00 | 551.00 | 0.01 | 5.51 | 20.00 | 110.20 |
| 22.00 | 618.50 | 0.01 | 6.19 | 17.70 | 109.47 |
| 24.00 | 0.00 | 0.00 | 0.00 | 15.80 | 660.55 |
| 26.00 | 0.00 | 0.00 | 0.00 | 14.10 | 660.55 |
| 28.00 | 0.00 | 0.00 | 0.00 | 12.60 | 660.55 |
| 30.00 | 0.00 | 0.00 | 0.00 | 11.30 | 660.55 |

66

SOUNDING 12 NASH ROAD LANDFILL

| dial reading (ohms) | scale multiplier | corrected reading (ohms) | *k (feet) | apparent resistivity (ohm-ft) | cumulative resistivity (ohm-ft) |
|---------------------------|---------------------|--------------------------------|--------------|-------------------------------------|---------------------------------------|
| 2.00 | 0.00 | 0.00 | 0.00 | 224.80 | 0.00 |
| 4.00 | 0.00 | 0.00 | 0.00 | 112.00 | 0.00 |
| 6.00 | 0.00 | 0.00 | 0.00 | 74.30 | 0.00 |
| 8.00 | 0.00 | 0.00 | 0.00 | 55.30 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 43.80 | 0.00 |
| 12.00 | 22.00 | 0.10 | 2.20 | 36.00 | 79.20 |
| 14.00 | 26.00 | 0.10 | 2.60 | 30.40 | 79.20 |
| 16.00 | 30.00 | 0.10 | 3.00 | 26.10 | 78.30 |
| 18.00 | 34.00 | 0.10 | 3.40 | 22.80 | 77.52 |
| 20.00 | 42.00 | 0.10 | 4.20 | 20.00 | 84.00 |
| 22.00 | 50.50 | 0.10 | 5.05 | 17.70 | 89.39 |
| 24.00 | 0.00 | 0.00 | 0.00 | 15.80 | 487.45 |
| 26.00 | 0.00 | 0.00 | 0.00 | 14.10 | 0.00 |
| 28.00 | 0.00 | 0.00 | 0.00 | 12.60 | 0.00 |
| 30.00 | 0.00 | 0.00 | 0.00 | 11.30 | 0.00 |

67

ENGINEERING-SCIENCE, INC.
RESISTIVITY PROFILE DATA SHEET

Job No. _____

Date 6-1-84

Site Name Nash Rd.

Site Location Nash Rd.

Observer(s) Hannan & Baker

Comments (soil conditions, etc.) moist & wet

Equipment Used (name, serial #) Bison

Electrode Array Method Used
(Boltby check = 318.5) Weinger - Profile
(29 milliamperes)

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-1 | 10 | 9.0 | 1.0 | 9.0 | 90 |
| P-1 | 20 | 5.5 | 1.0 | 5.5 | 110 |
| P-1 | 30 | 3.0 | 1.0 | 3.0 | 90 |
| P-1 | 50 | 29.5 | 0.1 | 2.95 | 147.5 |
| P-1 | 70 | 26.0 | 0.1 | 2.6 | 182 |
| P-2 | 10 | 86.0 | 0.1 | 8.6 | 86 |
| <u>S1</u> P-2 | 20 | 49.5 | 0.1 | 4.95 | 99 |

Bison Unit: Apparent Resistivity = Electrode Spacing \times ($2\pi V/I \times$ Scale Multiplier) where () = Corrected Reading

For. 1-1
Page 2 of 13
6-1-84

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-2 | 30 | 37.5 | 0.1 | 3.75 | 112.5 |
| P-2 | 50 | 30.5 | 0.1 | 3.05 | 152.5 |
| P-2 | 70 | 25.0 | 0.1 | 2.5 | 175.0 |
| P-3 | 10 | 86 | 0.1 | 8.6 | 86.0 |
| P-3 | 20 | 50 | 0.1 | 5.0 | 100.0 |
| P-3 | 30 | 38.5 | 0.1 | 3.85 | 115.5 |
| P-3 | 50 | 29.5 | 0.1 | 2.95 | 147.5 |
| P-3 | 70 | 22.5 | 0.1 | 2.25 | 192.5 |
| P-4 | 10 | 75 | 0.1 | 7.5 | 75.0 |
| P-4 | 20 | 44.5 | 0.1 | 4.45 | 89.0 |

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-4 | 30 | 32.5 | 0.1 | 3.25 | 97.5 |
| P-4 | 50 | 27.5 | 0.1 | 2.75 | 137.5 |
| P-4 | 70 | 25.0 | 0.1 | 2.5 | 175.0 |
| P-5 | 10 | 98.5 | 0.1 | 9.85 | 98.5 |
| P-5 | 20 | 51.5 | 0.1 | 5.15 | 103.0 |
| P-5 | 30 | 36.5 | 0.1 | 3.65 | 109.5 |
| P-5 | 50 | 30.0 | 0.1 | 3.0 | 150.0 |
| P-5 | 70 | 25.5 | 0.1 | 2.55 | 178.5 |
| P-6 | 10 | 116.0 | 0.1 | 11.6 | 116.0 |
| P-6 | 20 | 56.5 | 0.1 | 5.65 | 113.0 |

For
Page 4 of 13
6-1-84

| Station Location | Electrode Spacing (feet) | $2 \pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|--------------------|------------------|--------------------------|-----------------------------------|
| P-6 | 30 | 41.5 | 0.1 | 4.15 | 124.5 |
| P-6 | 50 | 30.0 | 0.1 | 3.0 | 150.0 |
| P-6 | 70 | 26.0 | 0.1 | 2.6 | 182.0 |
| P-7 | 10 | 110.0 | 0.1 | 11.0 | 110.0 |
| P-7 | 20 | 54.0 | 0.1 | 5.4 | 108.0 |
| P-7 | 30 | 40.5 | 0.1 | 4.05 | 121.5 |
| P-7 | 50 | 26.0 | 0.1 | 2.6 | 130.0 |
| P-7 | 70 | 24.5 | 0.1 | 2.45 | 171.5 |
| P-8 | 10 | 114.0 | 0.1 | 11.4 | 114 |
| P-8 | 20 | 53.5 | 0.1 | 5.35 | 107 |

6-1-84

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-8 | 30 | 40.0 | 0.1 | 4.0 | 120 |
| P-8 | 50 | 30.0 | 0.1 | 3.0 | 150 |
| P-8 | 70 | 28.0 | 0.1 | 2.8 | 196 |
| P-9 | 10 | 146.0 | 0.1 | 14.6 | 146 |
| P-9 | 20 | 48.5 | 0.1 | 4.85 | 97 |
| P-9 | 30 | 41.0 | 0.1 | 4.10 | 123 |
| P-9 | 50 | 31.0 | 0.1 | 3.1 | 155 |
| P-9 | 70 | 27.5 | 0.1 | 2.75 | 192.5 |
| P-10 | 10 | 146.0 | 0.1 | 14.6 | 146 |
| P-10 | 20 | 62.5 | 0.1 | 6.25 | 125 |

6-1-84

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-10 | 30 | 44.0 | 0.1 | 4.4 | 132 |
| P-10 | 50 | 32.0 | 0.1 | 3.2 | 160 |
| P-10 | 70 | 28.5 | 0.1 | 2.85 | 199.5 |
| P-11 | 10 | 183.5 | 0.1 | 18.35 | 183.5 |
| P-11 | 20 | 70.5 | 0.1 | 7.05 | 141 |
| P-11 | 30 | 46.0 | 0.1 | 4.6 | 138 |
| P-11 | 50 | 294.0 | 0.01 | 2.94 | 147 |
| P-11 | 70 | 294.0 | 0.01 | 2.94 | 205.8 |
| P-12 | 10 | 187.5 | 0.1 | 18.75 | 187.5 |
| P-12 | 20 | 66.5 | 0.1 | 6.65 | 133 |

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-12 | 30 | 44 | 0.1 | 4.4 | 132 |
| P-12 | 50 | 32.0 | 0.1 | 3.2 | 160 |
| P-12 | 70 | 29.5 | 0.1 | 2.95 | 206.5 |
| P-13 | 10 | 180.0 | 0.1 | 18 | 180 |
| P-13 | 20 | 66.5 | 0.1 | 6.65 | 133 |
| P-13 | 30 | 323.0 | 0.01 | 3.23 | 111.9 |
| P-13 | 50 | 26.0 | 0.1 | 2.6 | 130 |
| P-13 | 70 | 244 | 0.01 | 2.44 | 170.8 |
| P-14 | 10 | 177.5 | 0.1 | 17.75 | 177.5 |
| P-14 | 20 | 624.0 | 0.01 | 6.24 | 124.8 |

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-14 | 30 | 436.5 | 0.01 | 4.365 | 131.0 |
| P-14 | 50 | 315.5 | 0.01 | 3.155 | 157.8 |
| P-14 | 70 | 293.5 | 0.01 | 2.935 | 205.4 |
| P-15 | 10 | 194.5 | 0.1 | 19.45 | 194.5 |
| P-15 | 20 | 63.0 | 0.1 | 6.3 | 126 |
| P-15 | 30 | 33.0 | 0.1 | 3.3 | 99 |
| P-15 | 50 | 31.0 | 0.1 | 3.1 | 155 |
| P-15 | 70 | 269.0 | 0.01 | 2.69 | 188.3 |
| P-16 | 10 | 114.0 | 0.1 | 11.4 | 114 |
| P-16 | 20 | 55.0 | 0.1 | 5.5 | 110 |

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-16 | 30 | 41 | 0.1 | 4.1 | 123 |
| P-16 | 50 | 31.5 | 0.1 | 3.15 | 157.5 |
| P-16 | 70 | 272.5 | 0.01 | 2.725 | 190.75 |
| P-17 | 10 | 48 | 0.1 | 4.8 | 48 <i>in sandy shallow</i> |
| P-17 | 20 | 37 | 0.1 | 3.7 | 74 |
| P-17 | 30 | 31.0 | 0.1 | 3.1 | 93 |
| P-17 | 50 | 26 | 0.1 | 2.6 | 130 |
| P-17 | 70 | 23.5 | 0.1 | 2.35 | 164.5 |
| P-18 | 10 | 797.5 | 0.01 | 7.975 | 79.75 |
| P-18 | 20 | 41.5 | 0.1 | 4.15 | 83 |

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-18 | 30 | 29.5 | 0.1 | 2.95 | 89.4 88.5 |
| P-18 | 50 | 27 | 0.1 | 2.7 | 135 |
| P-18 | 70 | 24 | 0.1 | 2.4 | 168 |
| P-19 | 10 | 5.5 | 1.0 | 5.5 | 55 |
| P-19 | 20 | 23.5 | 0.1 | 2.35 | 47 |
| P-19 | 30 | 26.0 | 0.1 | 2.6 | 78 |
| P-19 | 50 | 23 | 0.1 | 2.3 | 115 |
| P-19 | 70 | 24 | 0.1 | 2.4 | 168 |
| P-20 | 10 | 124.5 | 0.1 | 12.45 | 124.5 |
| P-20 | 20 | 56.5 | 0.1 | 5.65 | 113.0 |

6-1-84

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-20 | 30 | 41.0 | 0.1 | 4.1 | 123 |
| P-21 | 10 | 138.5 | 0.1 | 13.85 | 138.5 |
| P-21 | 20 | 61.0 | 0.1 | 6.1 | 122 |
| P-21 | 30 | 43.0 | 0.1 | 4.3 | 129 |
| P-21 | 50 | 37.0 | 0.1 | 3.7 | 185 |
| P-21 | 70 | 32.0 | 0.1 | 3.2 | 224 |
| P-22 | 10 | 146.5 | 0.1 | 14.65 | 146.5 |
| P-22 | 20 | 63 | 0.1 | 6.3 | 126 |
| P-22 | 30 | 46 | 0.1 | 4.6 | 138 |
| P-22 | 50 | 39.5 | 0.1 | 3.95 | 197.5 |

6-1-84

| Station Location | Electrode Spacing (feet) | $2\pi V/I$ (ohms) | Scale Multiplier | Corrected Reading (ohms) | Apparent Resistivity (ohm - feet) |
|------------------|--------------------------|-------------------|------------------|--------------------------|-----------------------------------|
| P-22 | 70 | 33 | 0.1 | 3.3 | 231 |
| P-23 | 10 | 55 | 0.1 | 5.5 | 55 |
| P-23 | 20 | 39 | 0.1 | 3.9 | 78 |
| P-23 | 30 | 38 | 0.1 | 3.8 | 114 |
| P-23 | 50 | 24 | 0.1 | 2.4 | 120 |
| P-23 | 70 | 28 | 0.1 | 2.8 | 196 |
| P-24 | 10 | 91.5 | 0.1 | 9.15 | 91.5 |
| P-24 | 20 | 423 | 0.01 | 4.23 | 84.2 84.6 |
| P-24 | 30 | 388 | 0.01 | 3.88 | 116.4 |
| P-24 | 50 | 321 | 0.01 | 3.21 | 160.5 |

6-1-84

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 1 of 9

Job No. 36330

Date 5-30-84

Site Name and Location Nash Rd., N.Y.

Observer(s) Hansen & Baker (ES)

Base Station Location In wooded area. / N 55°W + 178' from B2

Equipment Used (name, serial #) Geometrics # 816/826A #667-
(IC Battery checks)

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|-------------------------------|----------------------------|--------------------|-----------------|
| | <u>N</u> | <u>Base Station</u> | <u>0850</u> | <u>57111</u> |
| | <u>S</u> | " | | <u>57116</u> |
| | <u>E</u> | " | | <u>57119</u> |
| | <u>W</u> | " | | <u>57119</u> |
| <u>A</u> | <u>North</u> | <u>Mug. Hunt (P.L.) TL</u> | | <u>58810</u> |
| | <u>40°</u> | <u>A1</u> | | <u>58052</u> |
| | " | <u>A2</u> | | <u>57293</u> |
| | " | <u>A3</u> | | <u>57331</u> |
| | " | <u>A4 (woods)(TL)</u> | | <u>57059</u> |
| | <u>5800°E from A (40°)</u> | | | |
| <u>B</u> | <u>North</u> | <u>B (P.L.) TL</u> | | <u>58396</u> |
| | <u>40°</u> | <u>B1</u> | | <u>58002</u> |
| | " | <u>B2</u> | | <u>57178</u> |
| | " | <u>B3</u> | | <u>57169</u> |
| | " | <u>B4</u> | | <u>57252</u> |
| | " | <u>B5</u> | | <u>57169</u> |
| | " | <u>B6</u> | | <u>57343</u> |
| <u>C</u> | <u>due East 40' from B</u> | <u>C TL</u> | | <u>57426</u> |
| | <u>North 40°</u> | <u>C1</u> | | <u>57348</u> |
| | <u>40°</u> | <u>C2</u> | | <u>57574</u> |
| | " | <u>C3</u> | | <u>58146</u> |
| | " | <u>C4</u> | | <u>57384</u> |
| | " | <u>C5</u> | | <u>57459</u> |
| | " | <u>C6</u> | | <u>57529</u> |
| | " | <u>C7</u> | | <u>57505</u> |
| | " | <u>C8</u> | | <u>57233</u> |
| | " | <u>C9 (SWR) w/ Gne</u> | | <u>57595</u> |
| <u>D</u> | <u>due East 40' from C</u> | <u>D (TL)</u> | | <u>57662</u> |
| | <u>North 40°</u> | <u>D1</u> | | <u>57646</u> |
| | " | <u>D2</u> | | <u>58052</u> |
| | " | <u>D3</u> | | <u>57152</u> |
| | " | <u>D4</u> | | <u>57186</u> |
| | " | <u>D5</u> | | <u>57244</u> |
| | " | <u>D6 (SW)</u> | | <u>57162</u> |

P.L. : Power line near

SWR : Standing wave, red

(SWL)
8

TL Tree line

G = 0.02

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 2 of 9

Job No. 36330

Date 5-30-84

Site Name and Location Nash Rd., N.Y.

Observer(s) Hannan & Baker (ES)

Base Station Location _____

Equipment Used (name, serial #) _____

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|------------------------------------|------------------------|--------------------|-----------------|
| D | North 40' | D7 (sw) | 56640 | |
| " | | D8 (sw) | 56903 | |
| " | | D9 | 57431 | |
| " | | D10 | 57312 | |
| " | | D11 (sw) | 57176 | |
| E | East 40' of D+11 South 40' | E | 57213 | |
| " | | E1 | 57680 | |
| " | 40' | E2 | 56980 | |
| " | | E3 (sw) Pit | 57679 | |
| " | | E4 (sw) " | 57219 | |
| " | | E5 (sw) " | 57729 | |
| " | | E6 (sw) Pit | 57361 | |
| " | | E7 SW Pit | 57134 | |
| " | | E8 | 57082 | |
| " | | E9 | 57705 | |
| " | | E10 | 57829 | |
| " | | E11 (TL) | 57573 | |
| X | over pipe line under power line | | 58623 | |
| | | | 58295 | |
| F | 40° due East of E11 | F | 57645 | |
| " | North 40' | F1 | 57481 | |
| " | | F2 | 57085 | |
| " | | F3 (sw) Pit | 57083 | |
| " | | F4 (sw) Pit | 57480 | |
| " | | F5 (sw) Pit | 57009 | |
| " | | F6 (sw) Pit | 57451 | |
| " | | F7 " | 56917 | |
| " | | F8 " | 57119 | |
| " | | F9 | 57230 | |
| " | | F10 | 57322 | |
| " | | F11 (SWN)Pit (L) | 57298 | |
| G | due East 40' of FN South 40' | G | 56375 | |
| " | | G1 | 57387 | |
| " | | G2 | 57673 | |
| " | | G3 (sw) Pit | 57834 | |

p : pit

82

~~Case F~~

~~0W-1~~

from straight line

assume $m = 1$ $H_1 = 2.43 \text{ ft} = 80.2 \text{ cm}$

$L = 6 \text{ ft} = 183 \text{ cm}$ $t_1 = 60 \text{ sec}$

$D = 17 \text{ cm}$ $H_2 = 0.34 \text{ ft} = 10.4 \text{ cm}$

$d = 5 \text{ cm}$ $t_2 = 360 \text{ sec}$

$$\frac{2mL}{D} = \frac{3(\cancel{182.9})}{17} > 4$$

$$k_h = \frac{d^2 \ln\left(\frac{4mL}{D}\right)}{8L(t_2 - t_1)} \ln \frac{H_1}{H_2}$$

$$k_h = \frac{5^2 \ln\left(\frac{4(1)(183)}{17}\right)}{8(183)(300)} \ln\left(\frac{80.2}{10.4}\right)$$

$$k_h = \frac{25(3.763)}{439200} (2.04)$$

$$k_h = \cancel{4.37} \times 10^{-4} \text{ cm/sec}$$

week

0W - 10

assume $m = 1$ $H_1 = 55.3 \text{ ft} = 1685.5 \text{ cm}$
 $L = 14 \text{ ft} = 426.7 \text{ cm}$ $t_1 = 60 \text{ sec}$
 $D = 17 \text{ cm}$ $H_2 = 51. \text{ ft} = 1554.5 \text{ cm}$
 $d = 5 \text{ cm}$ $t_2 = 3300 \text{ sec}$

$$k_h = \frac{d^2 \ln \left(\frac{4mL}{D} \right)}{8L(t_2 - t_1)} \ln \frac{H_1}{H_2}$$

$$k_h = \frac{(5^2) \ln \left(\frac{4(1)(426.7)}{17} \right)}{8(426.7)(3300 - 60)} \ln \left(\frac{1685}{1555} \right)$$

$$k_h = \frac{25 (4,609)}{11040064} \approx 0.08088$$

$$k_h = 8.43 \times 10^{-7} \text{ cm/sec}$$

84

Case 1

UW-2

assume $m=1$ $H_1 = 4.4' = 670.6$
 $L = 9 \text{ ft} = 274.3 \text{ cm}$ $t_1 = 120 \text{ sec}$
 $D = 17 \text{ cm}$ $H_2 = 0.42' = 12.8 \text{ cm}$
 $d = 5 \text{ cm}$ $t_2 = 480 \text{ sec}$

$$k_h = \frac{d^2 \ln \left(\frac{4 \text{ in } L}{D} \right)}{8 L (t_2 - t_1)} \ln \frac{H_1}{H_2}$$

$$k_h = \frac{5^2 \ln \left(\frac{4 \text{ in } (274.3)}{5} \right)}{8 (274.3) (480 - 120)} \ln \left(\frac{670.6}{12.8} \right)$$

$$\frac{(25) \quad 5,3911}{789984} \quad 3,9587$$

$$k_h = 6.75 \times 10^{-4} \text{ cm/sec}$$

85

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 3 of 9

Job No. 36330

Date 5-30-84

Site Name and Location Nash Rd, N.Y.

Observer(s) Hansen & Baker (ES)

Base Station Location _____

Equipment Used (name, serial #) _____

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|----------------------------------|-----------------------------|--------------------|-----------------|
| G | South 40' | G4 (SW)P:t | 58507 | |
| " | | G5 " | 57425 | |
| " | | G6 (SW)P:t | 56910 | |
| " | | G7 (SW)P:t | 58175 | |
| " | | G8 (SW)P:t | 57100 | |
| " | | G9 (SW)P:t | 57458 | |
| " | | G10 (SW)P:t | 52359 | |
| " | | G11 (SW)P:t | 57927 | |
| H | due East 40' of G11 North 40' | H (20' to TL) H1 (SW)P:t | 57429 58001 | |
| " | | H2 (SW) | 56798 | |
| " | | H3 | 57550 | |
| " | | H4 (SW:R)(L) | 56834 | |
| " | | H5 SW-R(L) | 56616 | |
| " | | H6 SW | 59107 / 59114 | |
| " | | H7 SW | 57777 | |
| " | | H8 | 57095 | |
| " | | H9 | 57372 | |
| " | | H10 | 56773 | |
| " | | H-11 | 56562 | |
| I | East 40' of H-11 South 40' | I I-1 | 55975 57049 | |
| " | | I-2 | 57043 | |
| " | | I-3 | 57654 | |
| " | | I-4 (SW) | 57214 | |
| " | | I-5 (SW) | 57801 | |
| " | | I-6 " | 57006 | |
| " | | I-7 " | 56929 | |
| " | | I-8 " | 56926 | |
| " | | I-9 " | 57194 | |
| " | | I-10 " (PH) | 57014 | |
| " | | I-11 " " (20' to TL) | 57873 | |

84

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 4 of 9

Job No. 36330

Date 5-30-84

Site Name and Location Nash Road, N.Y.

Observer(s) Baker & Haman (ES)

Base Station Location _____

Equipment Used (name, serial #) _____

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|-------------------------------|------------------------|--------------------|-----------------|
| J | East 40' of J-11 North 40' | J | | 58193 |
| | " | J-1 (SW) Pi+ | | 56819 |
| | " | J-2 | | 57018 |
| | " | J-3 SW Gas Bubbles | | 57351 |
| | " | J-4 SW | | 56957 |
| | " | J-5 SW | | 57231 |
| | " | J-6 SW | | 57014 |
| | " | J-7 SW | | 57311 |
| | " | J-8 | | 58252 |
| | " | J-9 | | 57327 |
| | " | J-10 | | 57696 |
| | " | J-11 SW R Ditch (TL) | | 56125 |
| K | East 40' of J-10 South 40' | K | SW R C Pith (TL) | 57057 |
| | " | K-1 (SW-R)L | | 57638 |
| | " | K-2 (SW-R)L | | 57619 |
| | " | K-3 (FT) | | 57321 |
| | " | K-4 SW (Nail Pile) | | 57141 |
| | " | K-5 SW | | 57482 |
| | " | K-6 | | 57230 |
| | " | K-7 | | 57114 |
| | " | K-8 | | 57232 |
| | " | K-9 | | 57177 |
| | " | K-10 SW (Pi+) | | 57502 |
| | " | K-11 | | 57167 |
| | " | K-12 SW R L (PL) (TL) | | 58436 |
| L | East 40' of K-12 North 40' | L | SW R (TL) | 57111 |
| | " | L-1 | | 57538 |
| | " | L-2 SW Pi+ | | 57145 |
| | " | L-3 | | 57424 |
| | " | L-4 | | 56976 |
| | " | L-5 | | 57126 |
| | " | L-6 SW | | 57289 |
| | " | L-7 SW | | 57050 |
| | " | L-8 | | 57079 |
| | " | L-9 | | 57085 |

87

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 5 of 9

Job No. 36.330

Date 5-30-84

Site Name and Location Nash Rd., N.Y.

Observer(s) Hansen & Baker (ES)

Base Station Location _____

Equipment Used (name, serial #) _____

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|-------------------------------|------------------------------|--------------------|-----------------|
| L | North 40' | L-10 (SWRL) | 57454 | |
| | " | L-11 SWRL (small of compass) | 57574 | |
| | " | L-12 SWRL (TL) | 56542 | |
| M | East 40' of L-11 | M | SWRL (Buo Bubble) | 57171 |
| | South 40' | M-1 | SW RL | 57439 |
| | " | M-2 | SW RL | 57125 |
| | " | M-3 | | 56907 |
| | " | M-4 | SW RL | 57320 |
| | " | M-5 | (ET) | 57306 |
| | " | M-6 | SW | 57576 |
| | " | M-7 | | 57844 |
| | " | M-8 | SW R (Buo Bul,Bk.) | 57367 |
| | " | M-9 | | 57776 |
| N | East 40' of M | M-10 | SW Pit | 58062 |
| | North 40' | M-11 | SW RL | 58574 |
| | " | N | SW | 56834 |
| | " | N-1 | SW Pit | 58026 |
| | " | N-2 | | 57391 |
| | " | N-3 | SW R | 57413 |
| | " | N-4 | SW | 57425 |
| | " | N-5 | SW (ET) | 57858 |
| | " | N-6 | SW | 57411 |
| | " | N-7 | SW RL | 57444 |
| O | East 40' of N-10 | N-8 | ET | 57224 |
| | South 40' | N-9 | ET | 57223 |
| | " | N-10 | SW RL | 57538 |
| | " | N-11 | SW RL (TL) | 57389 |
| | " | O | SWRL | 57019 |
| | " | O-1 | | 57336 |
| | " | O-2 | ET | 56964 |
| " | " | O-3 | | 57197 |
| " | " | O-4 | | 57006 |
| " | " | O-5 | | 57163 |
| " | " | O-6 | | 57253 |
| " | " | O-7 | | 58054 |

ET : exposed trash

88

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 7 of 9

Job No. 36330

Date 5-30-84

Site Name and Location Nash Rd., N.Y.

Observer(s) Baker & Hauman (ES)

Base Station Location _____

Equipment Used (name, serial #) _____

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|-------------------------------|----------------------------|----------------------|-----------------|
| R | North 40' | R-9 (20' to TL + SWR) | L | 57016 |
| S | East 40' of R-9 | S | " | 57628 |
| | South 40' | S-1 | | 57059 |
| | " | S-2 | | 57247 |
| | " | S-3 | | 57445 |
| | " | S-4 | | 57374 |
| | " | S-5 | | 57409 |
| | " | S-6 (ET) | | 57321 |
| | " | S-7 | | 57225 |
| | " | S-8 | | 57199 |
| | " | S-9 (West end of trench) | | 57448 |
| | " | S-10 (SW) | | 57358 |
| T | East 40' of S-10 | T | L | 57328 |
| | North 40' | T-1 (in pit - 25' wide) | | 57496 |
| | | | (SW w/ Cor. Bubbles) | |
| | N-40' | T-2 | | 57308 |
| | " | T-3 | | 57485 |
| | " | T-4 (ET) | | 57416 |
| | " | T-5 (ET) | | 57711 |
| | " | T-6 (ET) | | 57267 |
| | " | T-7 (ET) | | 56999 |
| | " | T-8 | | 57598 |
| | " | T-9 | | 57382 |
| | " | T-10 SWR (20' to TL) | L | 57621 |
| U | East 40' of T-10 | U | (SWR) | 56852 |
| | South 40' | U-1 | | 57153 |
| | " | U-2 | | 57379 |
| | " | U-3 | | 57475 |
| | " | U-4 | | 57077 |
| | " | U-5 | | 57150 |
| | " | U-6 | | 57163 |
| | " | U-7 | | 57763 |
| | " | U-8 | | 57202 |
| | " | U-9 SW pit (battery cases) | (BC) | 57746 |
| | " | U-10 | | 57351 |

T = Trench

81

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 8 of 9

Job No. 36.330

Date 5-30-84

Site Name and Location Nash Road, N.Y.

Observer(s) Baker & Harman (E.S.)

Base Station Location _____

Equipment Used (name, serial #) _____

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|-------------------------------|--------------------------|---------------------|-----------------|
| U | South 40' | U-11 | | 57052 |
| V | East 40' of U-11 | V | | 57333 |
| | North 40' | V-1 (Gas sampling site?) | | 58004 |
| " | | V-2 SW (pit) | | 57331 |
| " | | V-3 | | 57575 |
| " | | V-4 | | 57554 |
| " | | V-5 | | 57515 |
| " | | V-6 (ET) | | 57417 |
| " | | V-7 | | 57520 |
| " | | V-8 (ET) | | 57490 |
| " | | V-9 | | 57690 |
| " | | V-10 (SW-RL) | | 56989 |
| W | East 40' of V-10 | W (SW-RL) | | 56499 |
| | South 40' | W-1 | | 57824 |
| " | | W-2 (ED) | | 57313 |
| " | | W-3 | | 57691 |
| " | | W-4 | | 57802 |
| " | | W-5 | | 57317 |
| " | | W-6 (ET) | | 52689 |
| " | | W-7 | | 57441 |
| " | | W-8 | | 57390 |
| " | | W-9 | | 57293 |
| " | | W-10 | | 57029 |
| X | East 40' of W-10 | X | | 57072 |
| | North 40' | X-1 SW-ED | | 57528 |
| " | | X-2 | | 57223 |
| " | | X-3 | | 57585 |
| " | | X-4 (ED) (ar) | | 57806 |
| " | | X-5 (ED) (Battery cases) | | 57628 |
| " | | X-6 (F.D.) | | 52390 |
| " | | X-7 | | 57305 |
| " | | X-8 | | 57436 |
| " | | X-9 | | 57286 |
| " | | X-10 | West end of ED (ET) | 56561 |

90

**ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET**

Page 9 of 9

Job No. 36330

Date 5-30-84

Site Name and Location Nash Rd., N.Y.

Observer(s) Hannan - Baker (ES)

Base Station Location N 55°W, 178 feet from B-2

Equipment Used (name, serial #) Geometrics 816/826A # 66-73

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 1 of 5

Job No. 36330

Date 5-31-84

Site Name and Location Nash Rd., N.Y.

Observer(s) Baker & Hanman

Base Station Location _____

Equipment Used (name, serial #)
(Battery check 10) Geometrics 816/826A # 6673

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|-------------------------------|--|--------------------|-----------------|
| | | | | |
| | <u>N</u> | <u>MAG Base</u> | <u>0820</u> | <u>56 988</u> |
| | <u>S</u> | " | | <u>56 989</u> |
| | <u>E</u> | " | | <u>56 989</u> |
| | <u>W</u> | " | | <u>56 990</u> |
| | <u>North</u> | <u>Z</u> | | <u>57 554</u> |
| | <u>N 40'</u> | <u>Z-1</u> | | <u>56 979</u> |
| | " | <u>Z-2</u> (ED) | | <u>57 901</u> |
| | " | <u>Z-3</u> (FD) | | <u>57 573</u> |
| | " | <u>Z-4</u> | | <u>57 298</u> |
| | " | <u>Z-5</u> | | <u>57 002</u> |
| | " | <u>Z-6</u> | | <u>57 121</u> |
| | " | <u>Z-7</u> | | <u>56 932</u> |
| | " | <u>Z-8</u> (Battery Change) | | <u>57 471</u> |
| | " | <u>Z-9</u> (ET) | | <u>57 018</u> |
| | " | <u>Z-10</u> (EP) | | <u>56 900</u> |
| | <u>South (E-40')</u> | <u>AA</u> (Battery Change) (Notation EP) | | <u>57 431</u> |
| | <u>S 40'</u> | <u>AA-1</u> (" " ") | | <u>57 546</u> |
| | " | <u>AA-2</u> (" " ") | | <u>57 056</u> |
| | " | <u>AA-3</u> | | <u>57 313</u> |
| | " | <u>AA-4</u> | | <u>57 626</u> |
| | " | <u>AA-5</u> | | <u>57 413</u> |
| | " | <u>AA-6</u> | | <u>57 300</u> |
| | " | <u>AA-7</u> | | <u>57 424</u> |
| | " | <u>AA-8</u> | | <u>56 802</u> |
| | " | <u>AA-9</u> | | <u>57 720</u> |
| | " | <u>AA-10</u> (TL) | | <u>57 422</u> |
| | <u>North (E-40')</u> | <u>BB</u> (TL) (SW) | | <u>56 984</u> |
| | <u>N 40'</u> | <u>BB-1</u> | | <u>57 195</u> |
| | " | <u>BB-2</u> | | <u>57 112</u> |
| | " | <u>BB-3</u> | | <u>57 387</u> |
| | " | <u>BB-4</u> | | <u>57 212</u> |
| | " | <u>BB-5</u> | | <u>57 908</u> |
| | " | <u>BB-6</u> | | <u>57 907</u> |
| | " | <u>BB-7</u> | | <u>57 128</u> |

EP = EDGE OF POND

90
J

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 2 of 5

Job No. 36330

Date 5-31-84

Site Name and Location Nash Rd, N.Y.

Observer(s) Baker & Herman

Base Station Location _____

Equipment Used (name, serial #) _____

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|-------------------------------|------------------------|------------------------------------|-----------------|
| | <u>N 40'</u> | <u>BB-8</u> | <u>(ET)</u> | <u>57307</u> |
| | " | <u>BB-9</u> | <u>(Battery Case)</u> | <u>56959</u> |
| | " | <u>BB-10</u> | <u>(EA) (Battery Case)</u> | <u>57113</u> |
| | <u>South (E-40')</u> | <u>CC-1</u> | <u>Military Cases (S 30' N-EP)</u> | <u>57192</u> |
| | <u>S 40'</u> | <u>CC-1</u> | <u>(ET)</u> | <u>57270</u> |
| | " | <u>CC-2</u> | | <u>57591</u> |
| | " | <u>CC-3</u> | | <u>57619</u> |
| | " | <u>CC-4</u> | <u>(ET)</u> | <u>57061</u> |
| | " | <u>CC-5</u> | | <u>57452</u> |
| | " | <u>CC-6</u> | | <u>57338</u> |
| | " | <u>CC-7</u> | | <u>57043</u> |
| | " | <u>CC-8</u> | | <u>57144</u> |
| | " | <u>CC-9</u> | <u>(SW)</u> | <u>57073</u> |
| | " | <u>CC-10</u> | <u>(SW)</u> | <u>57334</u> |
| | <u>North (E-40')</u> | <u>DD</u> | | <u>57371</u> |
| | <u>N 40'</u> | <u>DD-1</u> | <u>(SW)</u> | <u>57211</u> |
| | " | <u>DD-2</u> | | <u>57323</u> |
| | " | <u>DD-3</u> | | <u>57158</u> |
| | " | <u>DD-4</u> | | <u>57245</u> |
| | " | <u>DD-5</u> | | <u>57369</u> |
| | " | <u>DD-6</u> | | <u>57224</u> |
| | " | <u>DD-7</u> | | <u>57267</u> |
| | " | <u>DD-8</u> | | <u>57693</u> |
| | " | <u>DD-9</u> | <u>(ET)</u> | <u>57066</u> |
| | " | <u>DD-10</u> | <u>(ET) (EP)</u> | <u>56964</u> |
| | <u>South (E-40')</u> | <u>EE</u> | <u>(ET) (N 30' N-EP)</u> | <u>57394</u> |
| | <u>S 40'</u> | <u>EE-1</u> | <u>(ET)</u> | <u>57329</u> |
| | " | <u>EE-2</u> | <u>(ET)</u> | <u>57126</u> |
| | " | <u>EE-3</u> | <u>(ET) (ED)</u> | <u>57271</u> |
| | " | <u>EE-4</u> | | <u>57169</u> |
| | " | <u>EE-5</u> | <u>(ED)</u> | <u>57589</u> |
| | " | <u>EE-6</u> | <u>(SWR)</u> | <u>56935</u> |
| | " | <u>EE-7</u> | <u>(SW)</u> | <u>57569</u> |
| | " | <u>EE-8</u> | <u>(SW) (TL)</u> | <u>57304</u> |
| | <u>North (E-40')</u> | <u>FF</u> | <u>(ET)</u> | <u>57169</u> |

93

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 3 of 5

Job No. _____

Date 5-31-84

Site Name and Location Nash Rd, N.Y.

Observer(s) Baker & Harman

Base Station Location _____

Equipment Used (name, serial #) _____

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|-------------------------------|------------------------|--------------------|-----------------|
| | <u>N 40'</u> | FF-1 | | 57162 |
| | " | FF-2 | | 57435 |
| | " | FF-3 | (ED) (SW) | 57305 |
| | " | FF-4 | (SW) X | 57147 |
| | " | FF-5 | (ED) | 57414 |
| | " | FF-6 | (ED) (ET) | 57520 |
| | " | FF-7 | (ET) | 57150 |
| | <u>N 30'</u> | FF-8 | (EP) (ET) | 57407 (NE) |
| | <u>SOUTH</u> (E-40) | GG | (FP) (ET) (Run) | 57214 |
| | <u>S 40'</u> | GG-1 | (FP) (Pit Area?) | 57043 |
| | " | GG-2 | (SW) Pit Area | 56989 |
| | " | GG-3 | | 57446 |
| | " | GG-4 | (SW) (Pit Area?) | 57675 |
| | " | GG-5 | | 57520 |
| | " | GG-6 | | 57549 |
| | <u>North</u> (E-40) | HH | (SW) TL | 57254 5724 |
| | <u>N 40'</u> | HH-1 | (SW) | 57354 |
| | " | HH-2 | | 57533 |
| | " | HH-3 | (SW) | 57293 |
| | " | HH-4 | | 57659 |
| | " | HH-5 | (SW) Pit Area | 56889 |
| | " | HH-6 | (EP) | 57114 |
| | <u>South</u> (E-40) | II-1 | Pit Area (EP) | 57245 |
| | <u>S 40'</u> | II-1 | | 57406 |
| | " | II-2 | | 57295 |
| | " | II-3 | | 57560 |
| | " | II-4 | | 57257 |
| | " | II-5 | ED (TL) | 57184 |
| | <u>North</u> (E-40) | JJ | | 57299 |
| | <u>N 40'</u> | JJ-1 | | 57265 |
| | " | JJ-2 | | 57411 |
| | " | JJ-3 | (ED) | 56903 |
| | " | JJ-4 | | 57178 |
| | " | JJ-5 | | 57603 |
| | " | JJ-6 | | 57694 |

94

ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET

Page 4 of 5

Job No. _____

Date 5-31-84

Site Name and Location Nash Rd.

Observer(s) Baker & Harman

Base Station Location _____

Equipment Used (name, serial #) _____

| Traverse Identification | Orientation (Compass Heading) | Station Identification | Time (24-hr Clock) | Reading (Gamma) |
|-------------------------|-------------------------------|------------------------|------------------------|-----------------|
| | N 40' | JJ-7 | (SW) (EP) Battery Case | 58178 / 5 |
| | " | JJ-8 | (EP) EAST | 57220 |
| | " | JJ-9 | ~30°E of EP | 57250 |
| | " | JJ-10 | | 57198 |
| | W 40' | II-6 | Diving Ditch (EP) | 57104 |
| | " | HH-7 | (NEP) | 57241 |
| | " | GG-7 | EP | 57250 |
| Smith | (E-40') | KK | | 57262 |
| | S 40' | KK-1 | | 57158 |
| | " | KK-2 | (ED) | 57004 |
| | " | KK-3 | (SW) | 56865 |
| | " | KK-4 | (ED) (SW) | 57567 |
| | " | KK-5 | | 57853 |
| | " | KK-6 | | 57523 |
| | " | KK-7 | (ED ?) | 57710 |
| | " | KK-8 | | 58165 / 5 |
| | " | KK-9 | | 57828 |
| | " | KK-10 | (TL) | 57410 |
| Nash | (E-40') | LL | (TL) | 57800 |
| | N 40' | LL-1 | (TL) | 57908 |
| | " | LL-2 | (TL) (SW) | 57313 |
| | " | LL-3 | (TL) | 57634 |
| | " | LL-4 | (TL) (ED) (SW) | 58521 / |
| | " | LL-5 | | 57990 / |
| | " | LL-6 | (SW) (ED) | 57325 |
| | " | LL-7 | (SW) Battery | 57608 |
| | " | LL-8 | (ED) (SW) | 56810 |
| | " | LL-9 | | 57171 |
| South | (E-40') | MM- | (TL) | 57142 |
| SS 40' | " | MM-1 | (SW) (ED) (TL) | 56818 |
| | " | MM-2 | (SW) (ED) (TL) | 57456 |
| | " | MM-3 | (TL) | 57109 |
| | " | MM-4 | (TL) | 57089 |
| | " | MM-5 | (TL) | 57164 |

95

**ENGINEERING-SCIENCE
MAGNETOMETER DATA SHEET**

Page 5 of 5

Job No.

Date 5-31-84

Site Name and Location Nash Rd.

Observer(s) Harrison & Baker

Base Station Location

Equipment Used (name, serial #)

96

250

NASH ROAD LANDFILL SOUNDING 1

97

200

150

100

50

0

Fill5'11'15'22'32'48'52'62'Top of Rock

APP RES (OHM-FT)

0

10

20

30

40

50

60

70

80

90

100

ELECTRODE SPACING (FT)

NASH ROAD LANDFILL SOUNDING 2

98

APP RES (OHM-FT)

500

400

300

200

100

0

0

10

20

30

40

50

60

70

80

90

100

ELECTRODE SPACING (FT)

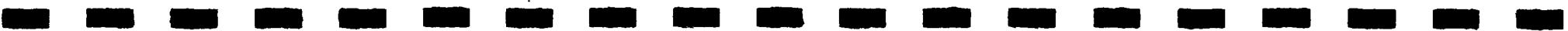
9'

16'

22'

41'

72' Top of Rock



250

NASH ROAD LANDFILL SOUNDING 3

99
96

200

150

100

50

0

APP RES (OHM-FT)

22'
25'

0 10 20 30 40 50 60 70 80 90 100

ELECTRODE SPACING (FT)

NASH ROAD LANDFILL SOUNDING 4

(00)

APP RES (OHM-FT)

150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

0 3 6 9 12 15 18 21 24 27 30

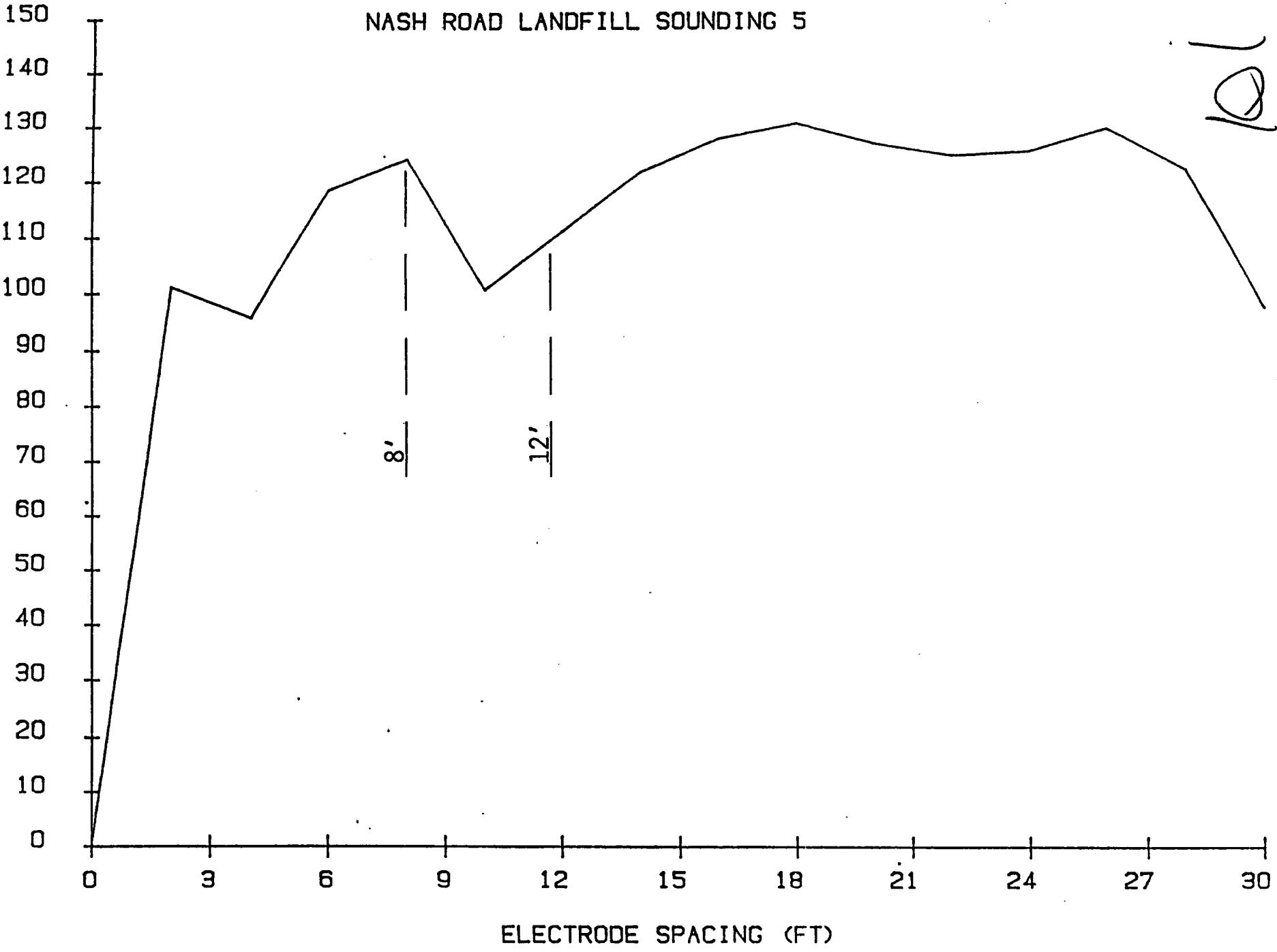
ELECTRODE SPACING (FT)

14'

18'

NASH ROAD LANDFILL SOUNDING 5

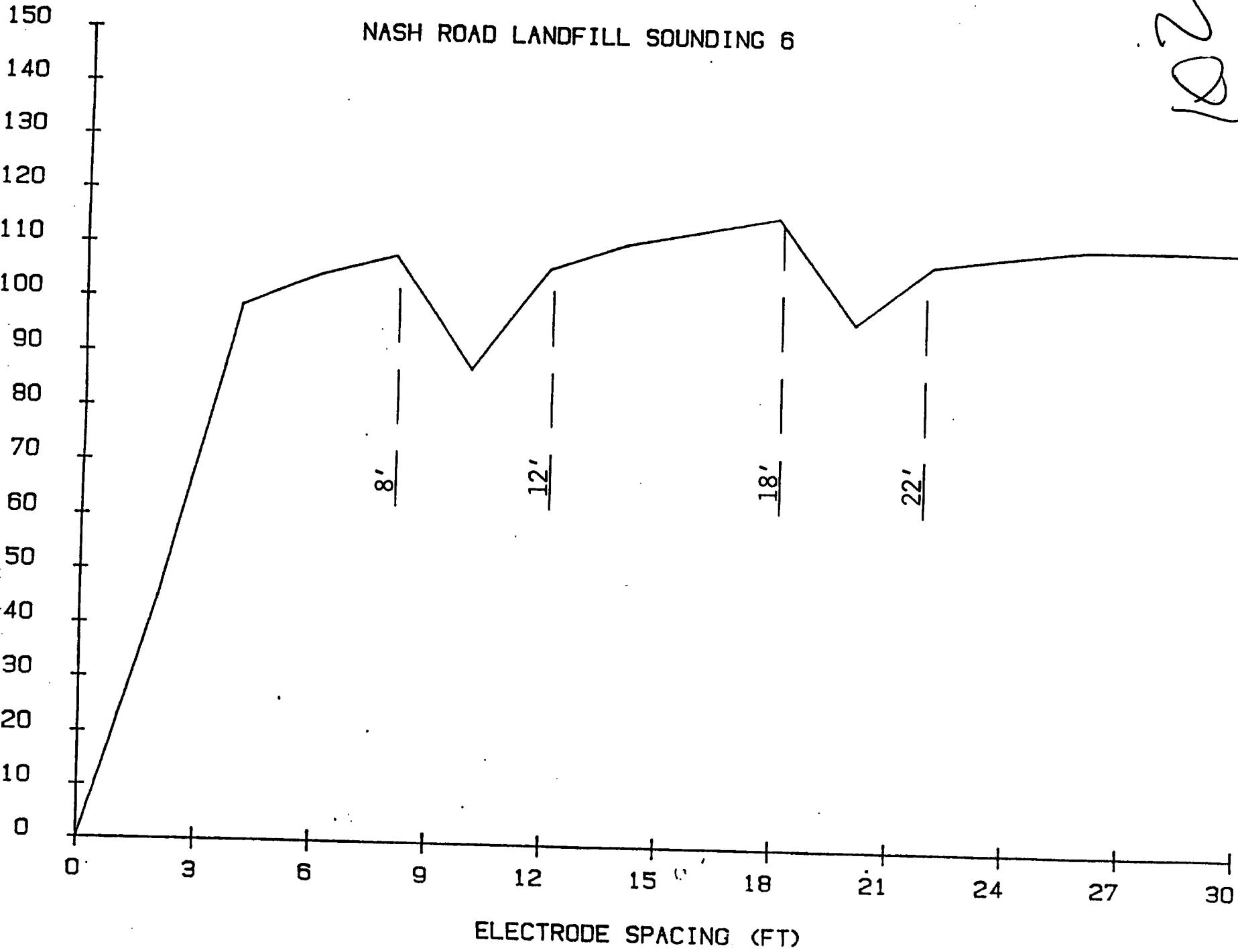
APP RES (OHM-FT)



NASH ROAD LANDFILL SOUNDING 6

102

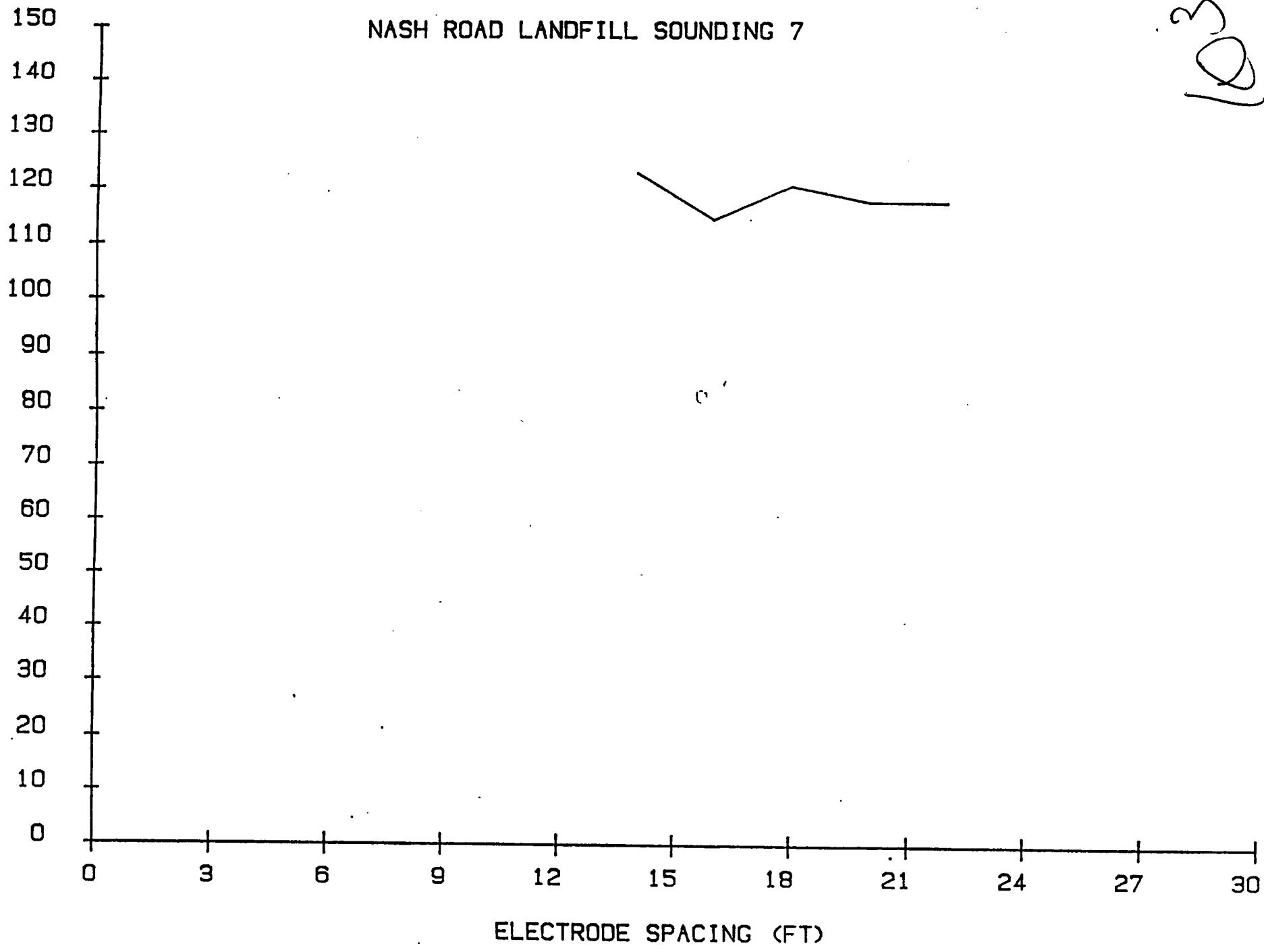
APP RES (DHM-FT)



NASH ROAD LANDFILL SOUNDING 7

103

APP RES (OHM-FT)



NASH ROAD LANDFILL SOUNDING 8

APP RES (OHM-FT)

100

90

80

70

60

50

40

30

20

10

0

0

3

6

9

12

15

18

21

24

27

30

ELECTRODE SPACING (FT)

20'

24'

104

NASH ROAD LANDFILL SOUNDING 9

105

APP RES (OHM-FT)

100
90
80
70
60
50
40
30
20
10
0

0 3 6 9 12 15 18 21 24 27 30

ELECTRODE SPACING (FT)

NASH ROAD LANDFILL SOUNDING 10

106

APP RES (OHM-FT)

120

110

100

90

80

70

60

50

40

30

20

10

0

0

3

6

9

12

15

18

21

24

27

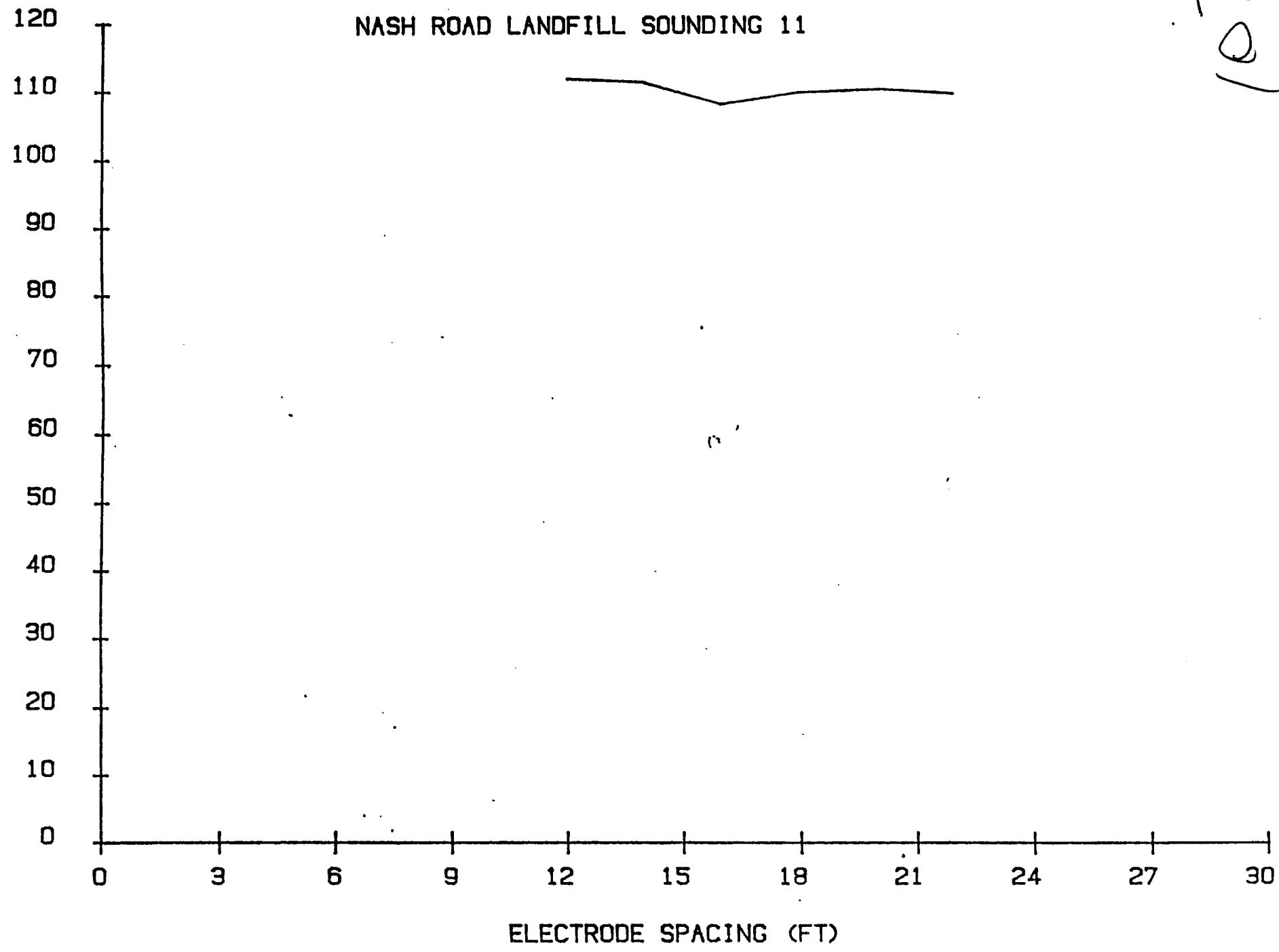
30

ELECTRODE SPACING (FT)

NASH ROAD LANDFILL SOUNDING 11

107

APP RES (OHM-FT)



108

NASH ROAD LANDFILL SOUNDING 12

APP RES. (OHM-FT)

100
90
80
70
60
50
40
30
20
10
0

0 3 6 9 12 15 18 21 24 27 30

ELECTRODE SPACING (FT)

APPENDIX D

CHEMICAL ANALYSES

- 1) HNU Meter Air Survey
- 2) Surface Water
- 3) Sediment
- 4) Groundwater
 - Monitoring Wells
 - Osterman Residential Well
- 5) Trip Blanks

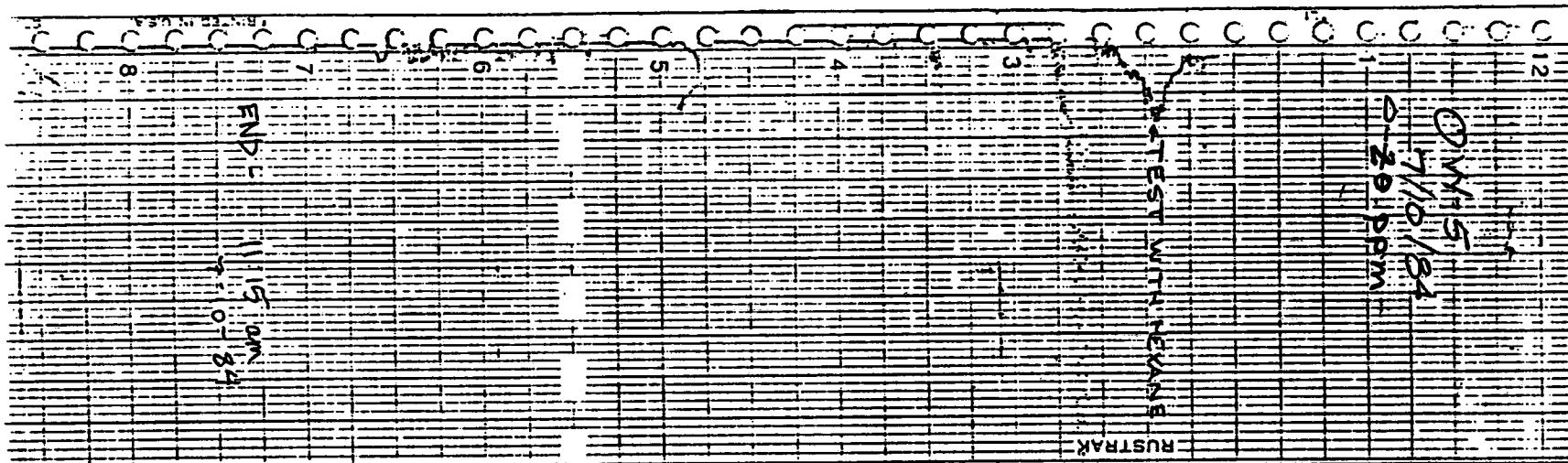
109

1) HNU METER AIR SURVEY

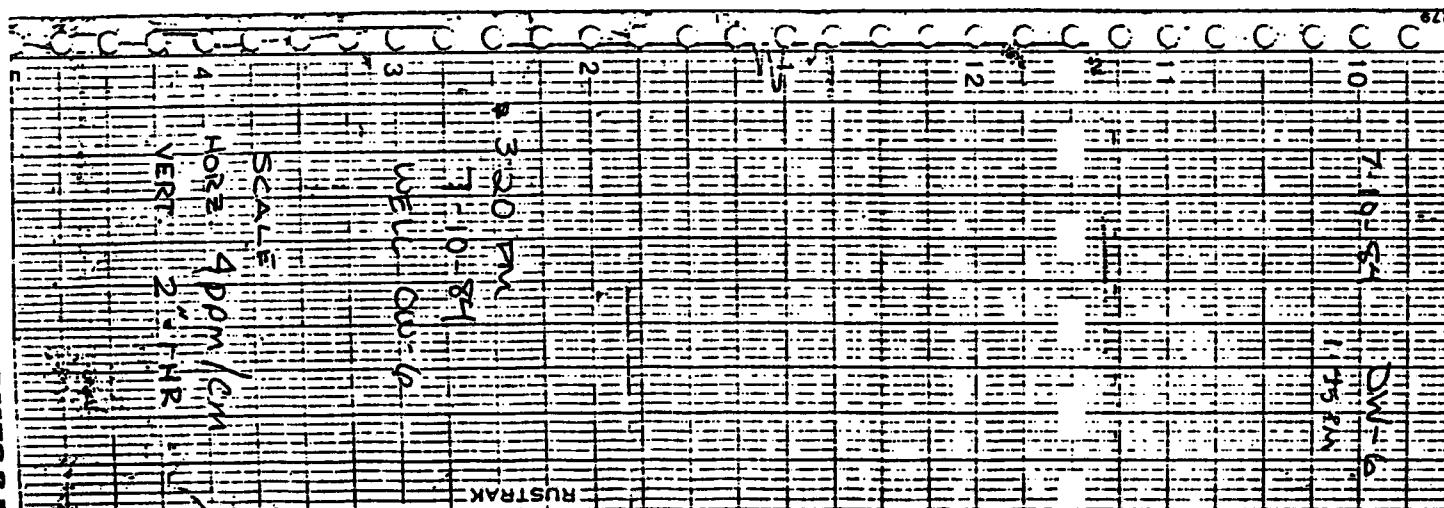
110

BY _____ DATE _____
CHECKED BY _____
COPY TO EO _____

REVISIONS
BY _____ DATE _____ TO EO _____
BY _____ DATE _____ TO EO _____



SCALE HORN 4 ppm/cm
VERT 2" = 1 HR



SCALE 4 ppm/cm
VERT 2" = 1 HR

DANES & MOORE

FILE 13325-003-19
SUBJECT HNU PHOTOIONIZER READING SHEET 1 OF 1
7/10/84

2) SURFACE WATER

112

Engineering-Science LABORATORY ANALYSIS REPORT

Date: 7/15/83

Job: NASH ROAD - Phase I

Sample Number: 36330

Note 1D: Five samples received 7/1/83 for volatile organics, base-neutral organics, total organic halogens and pH analysis.

| Parameter / Sample ID | SN-1 | SW-2 | SW-3 | SW-4 | SW-5 |
|----------------------------------|-------|-------|-------|-------|------|
| Methylene chloride (ug/L) | 11 | <10 | 10 | <10 | <10 |
| Chloroform (ug/L) | <10 | <10 | <10 | <10 | <10 |
| Tetrachloroethane (ug/L) | <10 | <10 | <10 | <10 | <10 |
| Benzene (ug/L) | <10 | <10 | <10 | <10 | <10 |
| Toluene (ug/L) | <10 | <10 | <10 | <10 | <10 |
| Chlorobenzene (ug/L) | <10 | <10 | <10 | <10 | <10 |
| 1,1,2-Trichloroethane (ug/L) | <10 | <10 | <10 | <10 | <10 |
| Tetrachloroethene (ug/L) | <10 | <10 | <10 | <10 | <10 |
| 1,1,2,2-Tetrachloroethane (ug/L) | <10 | <10 | <10 | <10 | <10 |
| Trichloroethene (ug/L) | <10 | <10 | <10 | <10 | <10 |
| Trichlorobenzene (ug/L) | <10 | <10 | <10 | <10 | <10 |
| Dichlorobenzene (ug/L) | <10 | <10 | <10 | <10 | <10 |
| Hexachlorobutadiene (ug/L) | <10 | <10 | <10 | <10 | <10 |
| pH (S.V.) | 6.9 | 8.1 | 7.1 | 7.4 | 7.4 |
| Total Organic Halogens (ppm) | 0.010 | 0.005 | 0.007 | 0.007 | 0.00 |

B.L. Thorpe
Laboratory Supervisor
13

**SAVANNAH LABORATORIES
AND ENVIRONMENTAL SERVICES, INC.**
P.O. Box 13842 • Savannah, Ga. 31406
912/354-7858



W. Andrews, Ph.D.

Janette M. Davis
Administr. VP

REPORT OF ANALYSIS

B. L. Thorpe
Engineering-Science
57 Executive Park South, NE
Suite 590
Atlanta, GA. 30329

REPORT NO. 5239

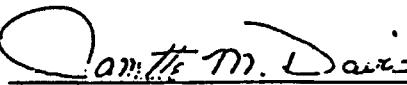
DATE RECEIVED 7/7/83

SAMPLED BY Client

IDENTIFICATION: Samples submitted to laboratory

METHODS: EPA Methods of Analysis (Model 610/O.I. Corp.)

| <u>SAMPLE ID.#</u> | <u>TOX CONTENT (ppm)</u> |
|--------------------|--------------------------|
| 07-1000-01 | 0.010 |
| 07-1001-01 | 0.005 |
| 07-1002-01 | 0.007 |
| 07-1003-01 | 0.007 |
| 07-1004-01 | 0.008 |



Janette M. Davis

114

3) SEDIMENT

115

COMPUCHEM LABORATORIES

August 29, 1984

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

Dear Mr. Schroder:

SEP 04 1984

Thank you for selecting CompuChem® Laboratories for your recent sample analysis. We have completed the analysis that you requested and have enclosed a summary of the CompuChem® data for your review. Additional data details are available for purchase if you require them.

As you know, EPA has proposed detection limits for the priority pollutants in the December 3, 1979, Federal Register, and we have reported all priority pollutant concentrations which have exceeded these limits (or their equivalent for solid matrices). In addition, we have permanently stored a complete record of your data on magnetic tape. This includes chromatograms, mass spectra, calibration and quality control data for the organics. Therefore, your original data is readily available for future reference. Should you require additional information from your data base, please contact us at 1/800-334-8525.

In order to expedite data to you, we have forwarded the results for all completed analyses. If you submitted more samples than are included in the enclosed results, the data will be forthcoming upon completion of our final review.

Your confidence in our CompuChem® service is appreciated. We look forward to a continuing association.

Sincerely,

Customer Service Dept.
CompuChem®

Enclosure:

| | | | |
|---------|------|---|-------|
| Report: | SD-3 | - | 32411 |
| | SD-2 | - | 32412 |
| | SD-1 | - | 32413 |

116

DATA REPORT NOTICE

CompuChem employs Methods 624 and 625 for GC/MS analysis of organics in liquid matrices. These methods were proposed on December 3, 1979 by the U.S.E.P.A. in Volume 44 of the Federal Register. These methods were subsequently revised and reissued in July, 1982 as publication EPA-600/4-82-057. The EPA Environmental Monitoring and Support Laboratory (EMSL-Cincinnati) has subsequently issued method modifications which provide for the analysis of solid matrices. These modifications specify changes in the sample preparation procedures.

Additionally, for solid samples detection limits and any analytical results reported are based on processing the method specified sample size of as-received material. -

The referenced methods are no longer appropriate for several of the original priority pollutant compounds. This is due to either the deletion from the toxic pollutant list (40 CFR Part 401) by EPA or the determination by EPA that the referenced methods may not be optimized for certain compounds (EPA-600/4-82-057) originally incorporated by the methods.

CompuChem® presents these compounds in its sample data report for completeness as many of the government compound list forms continue to display the affected compounds. For consistency, these compounds are reported as "BDL" or "Below Detection Limit" as they are either not likely to exist in the sample or are not likely to be detected by the method. Those compounds which have actually been deleted are listed below with the Federal Register deletion reference.

| <u>Compound Name</u> | <u>GC/MS Fraction</u> | <u>Federal Register</u> | <u>Date</u> |
|-------------------------|-----------------------|-------------------------|-------------|
| Dichlorodifluoromethane | Volatile | 46FR2264 | 1/8/81 |
| *Trichlorofluoromethane | Volatile | 46FR2264 | 1/8/81 |
| Bis(Chloromethyl)Ether | Volatile | 46FR10723 | 2/4/81 |

*While this compound has been deleted, CompuChem® continues to identify and quantitate for it.

117

COMPUCHEM
LABORATORIES

LABORATORY CHRONICLE

SAMPLE IDENTIFIER: SD-3
COMPUCHEM SAMPLE NUMBER: 32411

Samples:

Received - 7-26-84
Analyzed - 8-02-84

SAMPLE IDENTIFIER: SD-3 COMPUCHEM SAMPLE NUMBER: 32411
 32412
 32413
 SD-2
 SD-1

SUBMITTED TO:

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

Diana A. Scammell
DIANA A. SCAMMELL
TECHNICAL SPECIALIST, OPERATIONS

R. L. MYERS, PH.D., PRESIDENT

ROBERT E. MEIERER
DIRECTOR OF QUALITY ASSURANCE

118

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: SD-2
COMPUCHEM SAMPLE NUMBER: 32412

| <u>INORGANICS PRIORITY POLLUTANTS</u> | <u>CONCENTRATION (MG/KG)</u> | <u>DETECTION LIMIT (MG/KG)</u> |
|---|----------------------------------|------------------------------------|
| 14M. CYANIDE, TOTAL | BDL | 1.0 |

119

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: SD-1
COMPUCHEM SAMPLE NUMBER: 32413

| <u>INORGANICS PRIORITY POLLUTANTS</u> | <u>CONCENTRATION (MG/KG)</u> | <u>DETECTION LIMIT (MG/KG)</u> |
|---|----------------------------------|------------------------------------|
| 14M. CYANIDE, TOTAL | BDL | 1.0 |

120

SEP 10 1984

COMPUCHEM
LABORATORIES

August 31, 1984

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

SEP 06 1984

Engineering Science
Atlanta

Dear Mr. Schroder:

Thank you for selecting CompuChem® Laboratories for your recent sample analysis. We have completed the analysis that you requested and have enclosed a summary of the CompuChem® data for your review. Additional data details are available for purchase if you require them.

As you know, EPA has proposed detection limits for the priority pollutants in the December 3, 1979, Federal Register, and we have reported all priority pollutant concentrations which have exceeded these limits (or their equivalent for solid matrices). In addition, we have permanently stored a complete record of your data on magnetic tape. This includes chromatograms, mass spectra, calibration and quality control data for the organics. Therefore, your original data is readily available for future reference. Should you require additional information from your data base, please contact us at 1/800-334-8525.

In order to expedite data to you, we have forwarded the results for all completed analyses. If you submitted more samples than are included in the enclosed results, the data will be forthcoming upon completion of our final review.

Your confidence in our CompuChem® service is appreciated. We look forward to a continuing association.

Sincerely,

Customer Service Dept.
CompuChem®

Enclosure:

Report: SD-2 - 32299

121

DATA REPORT NOTICE

CompuChem employs Methods 624 and 625 for GC/MS analysis of organics in liquid matrices. These methods were proposed on December 3, 1979 by the U.S.E.P.A. in Volume 44 of the Federal Register. These methods were subsequently revised and reissued in July, 1982 as publication EPA-600/4-82-057. The EPA Environmental Monitoring and Support Laboratory (EMSL-Cincinnati) has subsequently issued method modifications which provide for the analysis of solid matrices. These modifications specify changes in the sample preparation procedures.

Additionally, for solid samples detection limits and any analytical results reported are based on processing the method specified sample size of as-received material.

The referenced methods are no longer appropriate for several of the original priority pollutant compounds. This is due to either the deletion from the toxic pollutant list (40 CFR Part 401) by EPA or the determination by EPA that the referenced methods may not be optimized for certain compounds (EPA-600/4-82-057) originally incorporated by the methods.

CompuChem® presents these compounds in its sample data report for completeness as many of the government compound list forms continue to display the affected compounds. For consistency, these compounds are reported as "BDL" or "Below Detection Limit" as they are either not likely to exist in the sample or are not likely to be detected by the method. Those compounds which have actually been deleted are listed below with the Federal Register deletion reference.

| <u>Compound Name</u> | <u>GC/MS Fraction</u> | <u>Federal Register</u> | <u>Date</u> |
|-------------------------|-----------------------|-------------------------|-------------|
| Dichlorodifluoromethane | Volatile | 46FR2264 | 1/8/81 |
| *Trichlorofluoromethane | Volatile | 46FR2264 | 1/8/81 |
| Bis(Chloromethyl)Ether | Volatile | 46FR10723 | 2/4/81 |

*While this compound has been deleted, CompuChem® continues to identify and quantitate for it.

122

COMPUCHEM
LABORATORIES

REPORT OF DATA

SAMPLE IDENTIFIER: SD-2

COMPUCHEM SAMPLE NUMBER: 32299

SUBMITTED TO:

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

Diana A. Scammell
DIANA A. SCAMMELL
TECHNICAL SPECIALIST, OPERATIONS

R. L. MYERS, PH.D., PRESIDENT

ROBERT E. MEIERER
DIRECTOR OF QUALITY ASSURANCE

123

LABORATORY CHRONICLE

SAMPLE IDENTIFIER: SD-2
COMPUCHEM SAMPLE NUMBER: 32299

| | <u>Date</u> |
|-----------------------|---------------|
| Received/Refrigerated | 07/27/84 |
| Organics | |
| Extracted | 08/01/84 |
| Analyzed | |
| 1. Volatiles | 07/03/84 |
| 2. Acid | 08/08/84 |
| 3. Base/Neutrals | 08/06/84 |
| 4. Pesticides/PCBS | 08/06/84 |
| Inorganics | |
| 1. Metals | 08/14/84 |
| 2. Cyanide | Not Requested |
| 3. Phenols | Not Requested |

124

COMPOUND LIST

- VOLATILES ORGANICS

SAMPLE IDENTIFIER: SD-2
 COMPUTECH SAMPLE NUMBER: 32299

| | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|----------------------------------|--|--|
| 1V. CHLOROMETHANE | BDL | 10 |
| 2V. VINYL CHLORIDE | BDL | 10 |
| 3V. CHLOROETHANE | BDL | 10 |
| 4V. BROMOMETHANE | BDL | 10 |
| 5V. ACROLEIN | BDL | 100 |
| 6V. ACRYLONITRILE | BDL | 100 |
| 7V. METHYLENE CHLORIDE | NDB* | 10 |
| 8V. TRICHLOROFLUOROMETHANE | BDL | 10 |
| 9V. 1,1-DICHLOROETHYLENE | BDL | 10 |
| 10V. 1,1-DICHLOROETHANE | BDL | 10 |
| 11V. TRANS-1,2-DICHLOROETHYLENE | BDL | 10 |
| 12V. CHLOROFORM | BDL | 10 |
| 13V. 1,2-DICHLOROETHANE | BDL | 10 |
| 14V. 1,1,1-TRICHLOROETHANE | BDL | 10 |
| 15V. CARBON TETRACHLORIDE | BDL | 10 |
| 16V. BROMODICHLOROMETHANE | BDL | 10 |
| 17V. 1,2-DICHLOROPROPANE | BDL | 10 |
| 18V. TRANS-1,3-DICHLOROPROPENE | BDL | 10 |
| 19V. TRICHLOROETHYLENE | BDL | 10 |
| 20V. BENZENE | BDL | 10 |
| 21V. CIS-1,3-DICHLOROPROPENE | BDL | 10 |
| 22V. 1,1,2-TRICHLOROETHANE | BDL | 10 |
| 23V. DIBROMOCHLOROMETHANE | BDL | 10 |
| 24V. BROMOFORM | BDL | 10 |
| 25V. 1,1,2,2-TETRACHLOROETHYLENE | BDL | 10 |
| 26V. 1,1,2,2-TETRACHLOROETHANE | BDL | 10 |
| 27V. TOLUENE | BDL | 10 |
| 28V. CHLOROBENZENE | BDL | 10 |
| 29V. ETHYLBENZENE | BDL | 10 |
| 30V. 2-CHLOROETHYL VINYL ETHER | BDL | 10 |
| 31V. DICHLORODIFLUOROMETHANE† | BDL | |
| 32V. BIS(CHLOROMETHYL)ETHER† | BDL | |

BDL=BELOW DETECTION LIMIT

*See Quality Assurance Notice

†See Data Report Notice

125

QUALITY ASSURANCE NOTICE

CompuChem Sample No. 32299

Although not required by the Federal Register, December 3, 1979 (modified July, 1982) Volatile Method 624 procedure, the laboratory prepares VOA blanks when compositing water samples and preparing low and medium level hazardous waste VOA samples. This is to insure that the glassware used is free from contamination, and to monitor the possibility of cross-contamination from high levels of volatile organic compounds in some samples and the laboratory atmosphere.

The compositing or method blank (# 32330) prepared with this sample contained the compound(s) listed below. Sample data associated with this blank have been adjusted and/or flagged according to the EPA-recommended methods.

| <u>Compound(s)</u> | <u>Concentration Found In Sample (ug/kg)</u> | <u>Applicable Qualifier*</u> |
|--------------------|--|----------------------------------|
| Methylene Chloride | 44 | NDB |

The following data qualifiers are used by EPA and adopted by CompuChem® for reporting purposes:

NDB = The concentration of a priority pollutant in the blank is greater than 1/2 the detection limit and is greater than 1/2 the concentration in the sample.

*No adjusted sample concentration is reported.

126

COMPOUND LIST -- ACID EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: SD-2
COMPUCHEM SAMPLE NUMBER: 32299

| | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION[†]</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|---------------------------|--|--|
| 1A. PHENOL | BDL | 500 |
| 2A. 2-CHLOROPHENOL | BDL | 500 |
| 3A. 2-NITROPHENOL | BDL | 500 |
| 4A. 2,4-DIMETHYLPHENOL | BDL | 500 |
| 5A. 2,4-DICHLOROPHENOL | BDL | 500 |
| 6A. P-CHLORO-M-CRESOL | BDL | 500 |
| 7A. 2,4,6-TRICHLOROPHENOL | BDL | 500 |
| 8A. 2,4-DINITROPHENOL | BDL | 5000 |
| 9A. 4-NITROPHENOL | BDL | 500 |
| 10A. 4,6-DINITRO-O-CRESOL | BDL | 5000 |
| 11A. PENTACHLOROPHENOL | BDL | 500 |

BDL=BELOW DETECTION LIMIT

[†]See Data Report Notice

127

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: SD-2
 COMPUCHEM SAMPLE NUMBER: 32299

| | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION[†]</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|---|--|--|
| 1B. N-NITROSODIMETHYLAMINE | BDL | 200 |
| 2B. BIS (2-CHLOROETHYL) ETHER | BDL | 200 |
| 3B. 1,3-DICHLOROBENZENE | BDL | 200 |
| 4B. 1,4-DICHLOROBENZENE | BDL | 200 |
| 5B. 1,2-DICHLOROBENZENE | BDL | 200 |
| 6B. BIS (2-CHLOROISOPROPYL) ETHER | BDL | 200 |
| 7B. HEXACHLOROETHANE | BDL | 200 |
| 8B. N-NITROSODI-N-PROPYLAMINE | BDL | 200 |
| 9B. NITROBENZENE | BDL | 200 |
| 10B. ISOPHORONE | BDL | 200 |
| 11B. BIS(2-CHLOROETHOXY) METHANE | BDL | 200 |
| 12B. 1,2,4-TRICHLOROBENZENE | BDL | 200 |
| 13B. NAPHTHALENE | BDL | 200 |
| 14B. HEXACHLOROBUTADIENE | BDL | 200 |
| 15B. HEXACHLOROCYCLOPENTADIENE | BDL | 200 |
| 16B. 2-CHLORONAPHTHALENE | BDL | 200 |
| 17B. DIMETHYLPHthalATE | BDL | 200 |
| 18B. ACENAPHTHYLENE | BDL | 200 |
| 19B. 2,6-DINITROTOLUENE | BDL | 200 |
| 20B. ACENAPHTHENE | BDL | 200 |
| 21B. 2,4-DINITROTOLUENE | BDL | 200 |
| 22B. DIETHYLPHthalATE | BDL | 200 |
| 23B. FLUORENE | BDL | 200 |
| 24B. 4-CHLOROPHENYL PHENYL ETHER | BDL | 200 |
| 25B. DIPHENYLAMINE (N-NITROSO) | BDL | 200 |
| 26B. 1,2-DIPHENYLHYDRAZINE (AZOBENZENE) | BDL | 200 |
| 27B. 4-BROMOPHENYL PHENYL ETHER | BDL | 200 |
| 28B. HEXACHLOROBENZENE | BDL | 200 |

BDL=BELOW DETECTION LIMIT
[†]See Data Report Notice

128

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLE ORGANICS (Page Two)

SAMPLE IDENTIFIER: SD-2
COMPUCHEM SAMPLE NUMBER: 32299

| | | CONCENTRATION (UG/KG) | DETECTION LIMIT (UG/KG) |
|------|----------------------------|--------------------------|-------------------------------|
| 29B. | PHENANTHRENE | BDL | 200 |
| 30B. | ANTHRACENE | BDL | 200 |
| 31B. | DI-N-BUTYLPHthalATE | BDL | 200 |
| 32B. | FLUORANTHENE | BDL | 200 |
| 33B. | BENZIDINE | BDL | 200 |
| 34B. | PYRENE | BDL | 200 |
| 35B. | BUTYLBENZYLPHthalATE | BDL | 200 |
| 36B. | BENZO(A)ANTHRACENE | BDL | 200 |
| 37B. | 3,3'-DICHLOROBENZIDINE | BDL | 200 |
| 38B. | CHRYSENE | BDL | 200 |
| 39B. | BIS(2-ETHYLHEXYL)PHTHALATE | BDL | 200 |
| 40B. | DI-N-OCTYLPHthalATE | BDL | 200 |
| 41B. | BENZO(B)FLUORANTHENE | BDL | 200 |
| 42B. | BENZO(K)FLUORANTHENE | BDL | 200 |
| 43B. | BENZO(A)PYRENE | BDL | 200 |
| 44B. | INDENO(1,2,3-C,D)PYRENE | BDL | 500 |
| 45B. | DIBENZO(A,H)ANTHRACENE | BDL | 500 |
| 46B. | BENZO(G,H,I)PERYLENE | BDL | 500 |

BDL=BELOW DETECTION LIMIT
†See Date Report Notice

129

CompuChem

LABORATORIES

3308 East Chapel Hill/Nelson Highway
P.O. Box 12652
Research Triangle Park, NC 27709

Telephone: 919-549-8263
800-334-8525

August 27, 1984

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

SEP 04 1984

Dear Mr. Schroder:

Thank you for selecting CompuChem® Laboratories for your recent sample analysis. We have completed the analysis that you requested and have enclosed a summary of the CompuChem® data for your review. Additional data details are available for purchase if you require them.

As you know, EPA has proposed detection limits for the priority pollutants in the December 3, 1979, Federal Register, and we have reported all priority pollutant concentrations which have exceeded these limits (or their equivalent for solid matrices). In addition, we have permanently stored a complete record of your data on magnetic tape. This includes chromatograms, mass spectra, calibration and quality control data for the organics. Therefore, your original data is readily available for future reference. Should you require additional information from your data base, please contact us at 1/800-334-8525.

In order to expedite data to you, we have forwarded the results for all completed analyses. If you submitted more samples than are included in the enclosed results, the data will be forthcoming upon completion of our final review.

Your confidence in our CompuChem® service is appreciated. We look forward to a continuing association.

Sincerely,

Customer Service Dept.
CompuChem®

Enclosure:

Report: SD-3 - 32297
SD-1 - 32301

(30)

DATA REPORT NOTICE

CompuChem employs Methods 624 and 625 for GC/MS analysis of organics in liquid matrices. These methods were proposed on December 3, 1979 by the U.S.E.P.A. in Volume 44 of the Federal Register. These methods were subsequently revised and reissued in July, 1982 as publication EPA-600/4-82-057. The EPA Environmental Monitoring and Support Laboratory (EMSL-Cincinnati) has subsequently issued method modifications which provide for the analysis of solid matrices. These modifications specify changes in the sample preparation procedures.

Additionally, for solid samples detection limits and any analytical results reported are based on processing the method specified sample size of as-received material.

The referenced methods are no longer appropriate for several of the original priority pollutant compounds. This is due to either the deletion from the toxic pollutant list (40 CFR Part 401) by EPA or the determination by EPA that the referenced methods may not be optimized for certain compounds (EPA-600/4-82-057) originally incorporated by the methods.

CompuChem® presents these compounds in its sample data report for completeness as many of the government compound list forms continue to display the affected compounds. For consistency, these compounds are reported as "BDL" or "Below Detection Limit" as they are either not likely to exist in the sample or are not likely to be detected by the method. Those compounds which have actually been deleted are listed below with the Federal Register deletion reference.

| <u>Compound Name</u> | <u>GC/MS Fraction</u> | <u>Federal Register</u> | <u>Date</u> |
|-------------------------|-----------------------|-------------------------|-------------|
| Dichlorodifluoromethane | Volatile | 46FR2264 | 1/8/81 |
| *Trichlorofluoromethane | Volatile | 46FR2264 | 1/8/81 |
| Bis(Chloromethyl)Ether | Volatile | 46FR10723 | 2/4/81 |

*While this compound has been deleted, CompuChem® continues to identify and quantitate for it.

(B)

CompuChem LABORATORIES

REPORT OF DATA

SAMPLE IDENTIFIER

SD-3
SD-1

COMPUCHEM SAMPLE NUMBER

32297
32301

SUBMITTED TO:

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

Diana A. Scammell
DIANA A. SCAMMELL
TECHNICAL SPECIALIST, OPERATIONS

R. L. MYERS, PH.D., PRESIDENT
ROBERT E. MEIERER
DIRECTOR OF QUALITY ASSURANCE

[32]

LABORATORY CHRONICLE

SAMPLE IDENTIFIER: SD-3
COMPUCHEM SAMPLE NUMBER: 32297

| | <u>Date</u> |
|-----------------------|---------------|
| Received/Refrigerated | 7-27-84 |
| Organics | |
| Extracted | 8-1-84 |
| Analyzed | |
| 1. Volatiles | 7-30-84 |
| 2. Acid | 8-8-84 |
| 3. Base/Neutrals | 8-4-84 |
| 4. Pesticides/PCBS | 8-4-84 |
| Inorganics | |
| 1. Metals | 8-14-84 |
| 2. Cyanide | Not Requested |
| 3. Phenols | Not Requested |

133

COMPOUND LIST

- VOLATILES ORGANICS

SAMPLE IDENTIFIER: SD-3
 COMPUCHEM SAMPLE NUMBER: 32297

| | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|----------------------------------|--|--|
| 1V. CHLOROMETHANE | BDL | 10 |
| 2V. VINYL CHLORIDE | BDL | 10 |
| 3V. CHLOROETHANE | BDL | 10 |
| 4V. BROMOMETHANE | BDL | 10 |
| 5V. ACROLEIN | BDL | 100 |
| 6V. ACRYLONITRILE | BDL | 100 |
| 7V. METHYLENE CHLORIDE | BDL | 10 |
| 8V. TRICHLOROFLUOROMETHANE | BDL | 10 |
| 9V. 1,1-DICHLOROETHYLENE | BDL | 10 |
| 10V. 1,1-DICHLOROETHANE | BDL | 10 |
| 11V. TRANS-1,2-DICHLOROETHYLENE | BDL | 10 |
| 12V. CHLOROFORM | BDL | 10 |
| 13V. 1,2-DICHLOROETHANE | BDL | 10 |
| 14V. 1,1,1-TRICHLOROETHANE | BDL | 10 |
| 15V. CARBON TETRACHLORIDE | BDL | 10 |
| 16V. BROMODICHLOROMETHANE | BDL | 10 |
| 17V. 1,2-DICHLOROPROPANE | BDL | 10 |
| 18V. TRANS-1,3-DICHLOROPROPENE | BDL | 10 |
| 19V. TRICHLOROETHYLENE | BDL | 10 |
| 20V. BENZENE | BDL | 10 |
| 21V. CIS-1,3-DICHLOROPROPENE | BDL | 10 |
| 22V. 1,1,2-TRICHLOROETHANE | BDL | 10 |
| 23V. DIBROMOCHLOROMETHANE | BDL | 10 |
| 24V. BROMOFORM | BDL | 10 |
| 25V. 1,1,2,2-TETRACHLOROETHYLENE | BDL | 10 |
| 26V. 1,1,2,2-TETRACHLOROETHANE | BDL | 10 |
| 27V. TOLUENE | BDL | 10 |
| 28V. CHLOROBENZENE | BDL | 10 |
| 29V. ETHYLBENZENE | BDL | 10 |
| 30V. 2-CHLOROETHYL VINYL ETHER† | BDL | 10 |
| 31V. DICHLORODIFLUOROMETHANE† | BDL | |
| 32V. BIS(CHLOROMETHYL)ETHER† | BDL | |

BDL=BELOW DETECTION LIMIT

†See Data Report Notice

134

COMPOUND LIST -- ACID EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: SD-3
COMPUCHEM SAMPLE NUMBER: 32297

| | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION*</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|---------------------------|--|---|
| 1A. PHENOL | BDL | 500 |
| 2A. 2-CHLOROPHENOL | BDL | 500 |
| 3A. 2-NITROPHENOL | BDL | 500 |
| 4A. 2,4-DIMETHYLPHENOL | BDL | 500 |
| 5A. 2,4-DICHLOROPHENOL | BDL | 500 |
| 6A. P-CHLORO-M-CRESOL | BDL | 500 |
| 7A. 2,4,6-TRICHLOROPHENOL | BDL | 500 |
| 8A. 2,4-DINITROPHENOL | BDL | 5000 |
| 9A. 4-NITROPHENOL | BDL | 500 |
| 10A. 4,6-DINITRO-O-CRESOL | BDL | 5000 |
| 11A. PENTACHLOROPHENOL | BDL | 500 |

BDL=BELOW DETECTION LIMIT

*Detection limits based on processing 50g of as-received sample.

135

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: SD-3
 COMPUCHEM SAMPLE NUMBER: 32297

| | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION*</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|---|--|---|
| 1B. N-NITROSODIMETHYLAMINE | BDL | 200 |
| 2B. BIS (2-CHLOROETHYL) ETHER | BDL | 200 |
| 3B. 1,3-DICHLOROBENZENE | BDL | 200 |
| 4B. 1,4-DICHLOROBENZENE | BDL | 200 |
| 5B. 1,2-DICHLOROBENZENE | BDL | 200 |
| 6B. BIS (2-CHLOROISOPROPYL) ETHER | BDL | 200 |
| 7B. HEXACHLOROETHANE | BDL | 200 |
| 8B. N-NITROSODI-N-PROPYLAMINE | BDL | 200 |
| 9B. NITROBENZENE | BDL | 200 |
| 10B. ISOPHORONE | BDL | 200 |
| 11B. BIS(2-CHLOROETHOXY) METHANE | BDL | 200 |
| 12B. 1,2,4-TRICHLOROBENZENE | BDL | 200 |
| 13B. NAPHTHALENE | BDL | 200 |
| 14B. HEXACHLOROBUTADIENE | BDL | 200 |
| 15B. HEXACHLOROCYCLOPENTADIENE | BDL | 200 |
| 16B. 2-CHLORONAPHTHALENE | BDL | 200 |
| 17B. DIMETHYLPHthalATE | BDL | 200 |
| 18B. ACENAPHTHYLENE | BDL | 200 |
| 19B. 2,6-DINITROTOLUENE | BDL | 200 |
| 20B. ACENAPHTHENE | BDL | 200 |
| 21B. 2,4-DINITROTOLUENE | BDL | 200 |
| 22B. DIETHYLPHthalATE | BDL | 200 |
| 23B. FLUORENE | BDL | 200 |
| 24B. 4-CHLOROPHENYL PHENYL ETHER | BDL | 200 |
| 25B. DIPHENYLAMINE (N-NITROSO) | BDL | 200 |
| 26B. 1,2-DIPHENYLHYDRAZINE (AZOBENZENE) | BDL | 200 |
| 27B. 4-BROMOPHENYL PHENYL ETHER | BDL | 200 |
| 28B. HEXACHLOROBENZENE | BDL | 200 |

BDL=BELOW DETECTION LIMIT

*Detection limits based on processing 50g of as-received sample.

[36]

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLE ORGANICS (Page Two)

SAMPLE IDENTIFIER: SD-3
 COMPUTECH SAMPLE NUMBER: 32297

| | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION*</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|---------------------------------|--|---|
| 29B. PHENANTHRENE | BDL | 200 |
| 30B. ANTHRACENE | BDL | 200 |
| 31B. DI-N-BUTYLPHthalate | BDL | 200 |
| 32B. FLUORANTHENE | BDL | 200 |
| 33B. BENZIDINE | BDL | 200 |
| 34B. PYRENE | BDL | 200 |
| 35B. BUTYLBENZYLPHthalate | BDL | 200 |
| 36B. BENZO(A)ANTHRACENE | BDL | 200 |
| 37B. 3,3'-DICHLOROBENZIDINE | BDL | 200 |
| 38B. CHRYSENE | BDL | 200 |
| 39B. BIS(2-ETHYLHEXYL)PHTHALATE | BDL | 200 |
| 40B. DI-N-OCTYLPHthalate | BDL | 200 |
| 41B. BENZO(B)FLUORANTHENE | BDL | 200 |
| 42B. BENZO(K)FLUORANTHENE | BDL | 200 |
| 43B. BENZO(A)PYRENE | BDL | 200 |
| 44B. INDENO(1,2,3-C,D)PYRENE | BDL | 500 |
| 45B. DIBENZO(A,H)ANTHRACENE | BDL | 500 |
| 46B. BENZO(G,H,I)PERYLENE | BDL | 500 |

BDL=BELOW DETECTION LIMIT

*Detection limits based on processing 50g of as-received sample.

137

COMPOUND LIST -- PESTICIDES/PCB'S

SAMPLE IDENTIFIER: SD-3
 COMPUCHEM SAMPLE NUMBER: 32297

| | | CONCENTRATION (UG/KG) | DETECTION* LIMIT (UG/KG) |
|------|--------------------|--------------------------|--------------------------------|
| 1P. | ALDRIN | BDL | 200 |
| 2P. | ALPHA-BHC | BDL | 200 |
| 3P. | BETA-BHC | BDL | 200 |
| 4P. | GAMMA-BHC | BDL | 200 |
| 5P. | DELTA-BHC | BDL | 200 |
| 6P. | CHLORDANE | BDL | 200 |
| 7P. | 4,4'-DDT | BDL | 200 |
| 8P. | 4,4'-DDE | BDL | 200 |
| 9P. | 4,4'-DDD | BDL | 200 |
| 10P. | DIELDRIN | BDL | 200 |
| 11P. | ALPHA-ENDOSULFAN | BDL | 200 |
| 12P. | BETA-ENDOSULFAN | BDL | 200 |
| 13P. | ENDOSULFAN SULFATE | BDL | 200 |
| 14P. | ENDRIN | BDL | 200 |
| 15P. | ENDRIN ALDEHYDE | BDL | 200 |
| 16P. | HEPTACHLOR | BDL | 200 |
| 17P. | HEPTACHLOR EPOXIDE | BDL | 200 |
| 18P. | PCB-1242 | BDL | 200 |
| 19P. | PCB-1254 | BDL | 200 |
| 20P. | PCB-1221 | BDL | 200 |
| 21P. | PCB-1232 | BDL | 200 |
| 22P. | PCB-1248 | BDL | 200 |
| 23P. | PCB-1260 | BDL | 200 |
| 24P. | PCB-1016 | BDL | 200 |
| 25P. | TOXAPHENE | BDL | 200 |

BDL=BELOW DETECTION LIMIT

*Detection limit based on processing 50g of as-received sample.

138

COMPOUND LIST -- INORGANICS PRIORITY POLLUTANTS

SAMPLE IDENTIFIER: SD-3
COMPUCHEM SAMPLE NUMBER: 32297

| | <u>CONCENTRATION</u> <u>(UG/G)</u> | <u>DETECTION LIMIT</u> <u>(UG/G)</u> |
|-------------|---------------------------------------|---|
| 1. CADMIUM | BDL | 0.20 |
| 2. CHROMIUM | 5.6 | 0.50 |
| 3. COPPER | 10.0 | 1.0 |
| 4. LEAD * | 14 | 0.50 |
| 5. MERCURY | 0.010 | 0.0020 |
| 6. NICKEL | 9.4 | 1.0 |
| 7. ZINC | 48 | 0.20 |

BDL=BELOW DETECTION LIMIT

*Lead analyzed by Flame AAS because of concentration level found.

139

LABORATORY CHRONICLE

SAMPLE IDENTIFIER: SD-1
COMPUCHEM SAMPLE NUMBER: 32301

| | <u>Date</u> |
|-----------------------|---------------|
| Received/Refrigerated | 7-27-84 |
| Organics | |
| Extracted | 8-1-84 |
| Analyzed | |
| 1. Volatiles | 7-31-84 |
| 2. Acid | 8-8-84 |
| 3. Base/Neutrals | 8-6-84 |
| 4. Pesticides/PCBS | 8-6-84 |
| Inorganics | |
| 1. Metals | 8-14-84 |
| 2. Cyanide | Not Requested |
| 3. Phenols | Not Requested |

190

COMPOUND LIST

- VOLATILES ORGANICS

SAMPLE IDENTIFIER: SD-1
 COMPUCHEM SAMPLE NUMBER: 32301

| | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|----------------------------------|--|--|
| 1V. CHLOROMETHANE | BDL | 10 |
| 2V. VINYL CHLORIDE | BDL | 10 |
| 3V. CHLOROETHANE | BDL | 10 |
| 4V. BROMOMETHANE | BDL | 10 |
| 5V. ACROLEIN | BDL | 100 |
| 6V. ACRYLONITRILE | BDL | 100 |
| 7V. METHYLENE CHLORIDE | BDL | 10 |
| 8V. TRICHLOROFUOROMETHANE | BDL | 10 |
| 9V. 1,1-DICHLOROETHYLENE | BDL | 10 |
| 10V. 1,1-DICHLOROETHANE | BDL | 10 |
| 11V. TRANS-1,2-DICHLOROETHYLENE | BDL | 10 |
| 12V. CHLOROFORM | BDL | 10 |
| 13V. 1,2-DICHLOROETHANE | BDL | 10 |
| 14V. 1,1,1-TRICHLOROETHANE | BDL | 10 |
| 15V. CARBON TETRACHLORIDE | BDL | 10 |
| 16V. BROMODICHLOROMETHANE | BDL | 10 |
| 17V. 1,2-DICHLOROPROPANE | BDL | 10 |
| 18V. TRANS-1,3-DICHLOROPROPENE | BDL | 10 |
| 19V. TRICHLOROETHYLENE | BDL | 10 |
| 20V. BENZENE | BDL | 10 |
| 21V. CIS-1,3-DICHLOROPROPENE | BDL | 10 |
| 22V. 1,1,2-TRICHLOROETHANE | BDL | 10 |
| 23V. DIBROMOCHLOROMETHANE | BDL | 10 |
| 24V. BROMOFORM | BDL | 10 |
| 25V. 1,1,2,2-TETRACHLOROETHYLENE | BDL | 10 |
| 26V. 1,1,2,2-TETRACHLOROETHANE | BDL | 10 |
| 27V. TOLUENE | BDL | 10 |
| 28V. CHLOROBENZENE | BDL | 10 |
| 29V. ETHYLBENZENE | BDL | 10 |
| 30V. 2-CHLOROETHYL VINYL ETHER | BDL | 10 |
| 31V. DICHLORODIFLUOROMETHANE† | BDL | |
| 32V. BIS(CHLOROMETHYL)ETHER† | BDL | |

BDL=BELOW DETECTION LIMIT

†See Data Report Notice

141

COMPOUND LIST

--

ACID EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: SD-1
COMPUCHEM SAMPLE NUMBER: 32301

| | <u>CONCENTRATION</u> (UG/KG) | <u>DETECTION*</u> <u>LIMIT</u> (UG/KG) |
|---------------------------|---------------------------------|--|
| 1A. PHENOL | BDL | 500 |
| 2A. 2-CHLOROPHENOL | BDL | 500 |
| 3A. 2-NITROPHENOL | BDL | 500 |
| 4A. 2,4-DIMETHYLPHENOL | BDL | 500 |
| 5A. 2,4-DICHLOROPHENOL | BDL | 500 |
| 6A. P-CHLORO-M-CRESOL | BDL | 500 |
| 7A. 2,4,6-TRICHLOROPHENOL | BDL | 500 |
| 8A. 2,4-DINITROPHENOL | BDL | 5000 |
| 9A. 4-NITROPHENOL | BDL | 500 |
| 10A. 4,6-DINITRO-O-CRESOL | BDL | 5000 |
| 11A. PENTACHLOROPHENOL | BDL | 500 |

BDL=BELOW DETECTION LIMIT

*Detection limits based on processing 50g of as-received sample.

142

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: SD-1
COMPUCHEM SAMPLE NUMBER: 32301

| | CONCENTRATION (UG/KG) | DETECTION* LIMIT (UG/KG) |
|---|--------------------------|--------------------------------|
| 1B. N-NITROSODIMETHYLAMINE | BDL | 200 |
| 2B. BIS (2-CHLOROETHYL) ETHER | BDL | 200 |
| 3B. 1,3-DICHLOROBENZENE | BDL | 200 |
| 4B. 1,4-DICHLOROBENZENE | BDL | 200 |
| 5B. 1,2-DICHLOROBENZENE | BDL | 200 |
| 6B. BIS (2-CHLOROISOPROPYL) ETHER | BDL | 200 |
| 7B. HEXACHLOROETHANE | BDL | 200 |
| 8B. N-NITROSODI-N-PROPYLAMINE | BDL | 200 |
| 9B. NITROBENZENE | BDL | 200 |
| 10B. ISOPHORONE | BDL | 200 |
| 11B. BIS(2-CHLOROETHOXY) METHANE | BDL | 200 |
| 12B. 1,2,4-TRICHLOROBENZENE | BDL | 200 |
| 13B. NAPHTHALENE | BDL | 200 |
| 14B. HEXACHLOROBUTADIENE | BDL | 200 |
| 15B. HEXACHLOROCYCLOPENTADIENE | BDL | 200 |
| 16B. 2-CHLORONAPHTHALENE | BDL | 200 |
| 17B. DIMETHYLPHthalATE | BDL | 200 |
| 18B. ACENAPHTHYLENE | BDL | 200 |
| 19B. 2,6-DINITROTOLUENE | BDL | 200 |
| 20B. ACENAPHTHENE | BDL | 200 |
| 21B. 2,4-DINITROTOLUENE | BDL | 200 |
| 22B. DIETHYLPHthalATE | BDL | 200 |
| 23B. FLUORENE | BDL | 200 |
| 24B. 4-CHLOROPHENYL PHENYL ETHER | BDL | 200 |
| 25B. DIPHENYLAMINE (N-NITROSO) | BDL | 200 |
| 26B. 1,2-DIPHENYLHYDRAZINE (AZOBENZENE) | BDL | 200 |
| 27B. 4-BROMOPHENYL PHENYL ETHER | BDL | 200 |
| 28B. HEXACHLOROBENZENE | BDL | 200 |

BDL=BELOW DETECTION LIMIT

*Detection limit based on processing 50g of as-received sample.

143

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLE ORGANICS (Page Two)

SAMPLE IDENTIFIER: SD-1
 COMPUTECH SAMPLE NUMBER: 32301

| | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION*</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|---------------------------------|--|---|
| 29B. PHENANTHRENE | BDL | 200 |
| 30B. ANTHRACENE | BDL | 200 |
| 31B. DI-N-BUTYLPHthalate | BDL | 200 |
| 32B. FLUORANTHENE | BDL | 200 |
| 33B. BENZIDINE | BDL | 200 |
| 34B. PYRENE | BDL | 200 |
| 35B. BUTYLBENZYLPHthalate | BDL | 200 |
| 36B. BENZO(A)ANTHRACENE | BDL | 200 |
| 37B. 3,3'-DICHLOROBENZIDINE | BDL | 200 |
| 38B. CHRYSENE | BDL | 200 |
| 39B. BIS(2-ETHYLHEXYL)PHTHALATE | BDL | 200 |
| 40B. DI-N-OCTYLPHthalate | BDL | 200 |
| 41B. BENZO(B)FLUORANTHENE | BDL | 200 |
| 42B. BENZO(K)FLUORANTHENE | BDL | 200 |
| 43B. BENZO(A)PYRENE | BDL | 200 |
| 44B. INDENO(1,2,3-C,D)PYRENE | BDL | 500 |
| 45B. DIBENZO(A,H)ANTHRACENE | BDL | 500 |
| 46B. BENZO(G,H,I)PERYLENE | BDL | 500 |

BDL=BELOW DETECTION LIMIT

*Detection limit based on processing 50g of as-received sample.

144

COMPOUND LIST -- PESTICIDES/PCB'S

SAMPLE IDENTIFIER: SD-1
 COMPUCHEM SAMPLE NUMBER: 32301

| | | <u>CONCENTRATION</u> <u>(UG/KG)</u> | <u>DETECTION*</u> <u>LIMIT</u> <u>(UG/KG)</u> |
|------|--------------------|--|---|
| 1P. | ALDRIN | BDL | 200 |
| 2P. | ALPHA-BHC | BDL | 200 |
| 3P. | BETA-BHC | BDL | 200 |
| 4P. | GAMMA-BHC | BDL | 200 |
| 5P. | DELTA-BHC | BDL | 200 |
| 6P. | CHLORDANE | BDL | 200 |
| 7P. | 4,4'-DDT | BDL | 200 |
| 8P. | 4,4'-DDE | BDL | 200 |
| 9P. | 4,4'-DDD | BDL | 200 |
| 10P. | DIELDRIN | BDL | 200 |
| 11P. | ALPHA-ENDOSULFAN | BDL | 200 |
| 12P. | BETA-ENDOSULFAN | BDL | 200 |
| 13P. | ENDOSULFAN SULFATE | BDL | 200 |
| 14P. | ENDRIN | BDL | 200 |
| 15P. | ENDRIN ALDEHYDE | BDL | 200 |
| 16P. | HEPTACHLOR | BDL | 200 |
| 17P. | HEPTACHLOR EPOXIDE | BDL | 200 |
| 18P. | PCB-1242 | BDL | 200 |
| 19P. | PCB-1254 | BDL | 200 |
| 20P. | PCB-1221 | BDL | 200 |
| 21P. | PCB-1232 | BDL | 200 |
| 22P. | PCB-1248 | BDL | 200 |
| 23P. | PCB-1260 | BDL | 200 |
| 24P. | PCB-1016 | BDL | 200 |
| 25P. | TOXAPHENE | BDL | 200 |

BDL=BELOW DETECTION LIMIT

*Detection limit based on processing 50g of as-received sample.

145

COMPOUND LIST -- INORGANICS PRIORITY POLLUTANTS

SAMPLE IDENTIFIER: SD-1
COMPUCHEM SAMPLE NUMBER: 32301

| | <u>CONCENTRATION</u> <u>(UG/G)</u> | <u>DETECTION LIMIT</u> <u>(UG/G)</u> |
|--------------------|---------------------------------------|---|
| 1. CADMIUM, TOTAL | 0.30 | 0.020 |
| 2. CHROMIUM, TOTAL | 6.8 | 0.50 |
| 3. COPPER, TOTAL | 5.7 | 1.0 |
| 4. LEAD, TOTAL * | 18 | 0.50 |
| 5. MERCURY, TOTAL | 0.0084 | 0.0020 |
| 6. NICKEL, TOTAL | 6.5 | 1.0 |
| 7. ZINC, TOTAL | 40 | 0.20 |

BDL=BELOW DETECTION LIMIT

*Lead analyzed by flame AAS because of concentration level found.

146

4) GROUNDWATER

**MONITORING WELLS
OSETERMAN RESIDENTIAL WELL**

(47)

Nash Kd

H2M LABORATORY

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL SERVICES

November 1, 1984

Mr. Rocco Palazolo
Engineering Sciences
57 Executive Park S.
Atlanta, Georgia 30329

Re: Sample results for OW-1A, OW-1B, OW-2,
OW-3, OW-4, OW-5, & OW-6.

Dear Rocco:

Enclosed please find additional copies of the reports for the above referenced samples. As we discussed, they were shipped to RECRA Environmental Laboratories for analysis, since we were unable to meet your turnaround time needs at the time.

Should you have any questions or comments, please do not hesitate to contact me at anytime.

Very truly yours,

H2M CORPORATION

Stanley C. Lewis
Operations Manager - Laboratory

SCL/jes
Enclosure

148

575 BROAD HOLLOW ROAD, MELVILLE, N.Y. 11747 • 516-694-3040

Established in 1958

Member ACIL





RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

August 24, 1984

Mr. Stan Lewis
H2M
575 Broadhollow Road
Melville, NY 11747

Re: Analytical Results

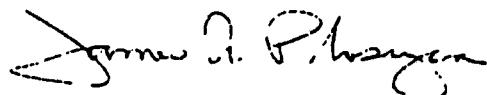
Dear Mr. Lewis:

Please find enclosed results of the analyses of the samples received at our laboratories on July 30 and August 1, 1984.

If you have any questions concerning these data, do not hesitate to contact our Customer Service Representative at (716) 692-7620.

Sincerely,

RECRA ENVIRONMENTAL LABORATORIES



James A. Ploscyca
Laboratory Manager

BJK/JAP/mdc/jhs
Enclosure

I.D. #84-746
84-746 A
84-746 B

149



RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

ANALYTICAL REPORT

150



RECRA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

ANALYTICAL RESULTS

H2M PRIORITY POLLUTANT ANALYSES

Prepared For:

H2M
575 Broadhallow Road
Melville, NY 11747

Prepared By:

Recra Environmental Laboratories
4248 Ridge Lea Road
Amherst, NY 14226

Report Date:

August 24, 1984

(S)

ANALYTICAL RESULTS

H2M PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

INTRODUCTION:

On July 30, and August 1, 1984 samples were received at Recra Environmental Laboratories. A request was made by H2M to have the samples analyzed for selected fractions of the Environmental Protection Agency decreed priority pollutants, total organic halide, and to determine the pH.

This report will address the results of those analyses.

METHODS:

Priority pollutant analyses were conducted according to Environmental Protection Agency (EPA) methodologies.

Organic priority pollutants were analyzed by Gas Chromatography/Mass Spectrometry (GC/MS).

RESULTS AND DISCUSSION:

Analysis for total organic halide was subcontracted. Sample FT-1 for total organic halide was not received.

Total organic halide values reported as "less than" (<) indicate the working detection limit for the given sample and/or parameter.

Sample OW-2 was analyzed in duplicate for the base neutral compounds but no positive values resulted.

Compounds reported as ND are "not detected". Compounds reported as BDL are confirmed as being present in the sample at a level "below detection limit", and are not subject to reliable quantitation.

Respectfully Submitted,

RECRE ENVIRONMENTAL LABORATORIES

Barbara J. Krajewski

152

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

BASE/NEUTRALS

| COMPOUND | DETECTION LIMIT (ug/l) | SAMPLE IDENTIFICATION | | |
|-----------------------------|------------------------------|-----------------------|-------|------|
| | | OW-1 | OW-1B | OW-2 |
| acenaphthene | 1.9 | ND | ND | ND |
| acenaphthylene | 3.5 | ND | ND | ND |
| anthracene | 1.9 | ND | ND | ND |
| benzidine | 44 | ND | ND | ND |
| benzo(a)anthracene | 7.8 | ND | ND | ND |
| benzo(a)pyrene | 2.5 | ND | ND | ND |
| benzo(b)fluoranthene | 4.8 | ND | ND | ND |
| benzo(g,h,i)perylene | 4.1 | ND | ND | ND |
| benzo(k)fluoranthene | 2.5 | ND | ND | ND |
| bis(2-chloroethoxy)methane | 5.3 | ND | ND | ND |
| bis(2-chloroethyl)ether | 5.7 | ND | ND | ND |
| bis(2-chloroisopropyl)ether | 5.7 | ND | ND | ND |
| bis(2-ethylhexyl)phthalate | 2.5 | ND | ND | ND |
| 4-bromophenylphenylether | 1.9 | ND | ND | ND |
| butylbenzylphthalate | 2.5 | ND | ND | ND |
| 2-chloronaphthalene | 1.9 | ND | ND | ND |
| 4-chlorophenylphenylether | 4.2 | ND | ND | ND |
| chrysene | 2.5 | ND | ND | ND |
| dibenzo(a,h)anthracene | 2.5 | ND | ND | ND |
| 1,2-dichlorobenzene | 1.9 | ND | ND | ND |
| 1,3-dichlorobenzene | 1.9 | ND | ND | ND |
| 1,4-dichlorobenzene | 4.4 | ND | ND | ND |
| 3,3'-dichlorobenzidine | 16.5 | ND | ND | ND |
| diethylphthalate | 22 | ND | ND | ND |
| dimethylphthalate | 1.6 | ND | ND | ND |
| di-n-butylphthalate | 2.5 | ND | ND | ND |

(Continued)

153



ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

BASE/NEUTRALS

| COMPOUND | DETECTION LIMIT ($\mu\text{g}/\text{l}$) | SAMPLE IDENTIFICATION | | |
|---------------------------|---|-----------------------|-------|------|
| | | OW-1 | OW-1B | OW-2 |
| 2,6-dinitrotoluene | 1.9 | ND | ND | ND |
| 2,4-dinitrotoluene | 5.7 | ND | ND | ND |
| di-n-octylphthalate | 2.5 | ND | ND | ND |
| 1,2-diphenylhydrazine | 25 | ND | ND | ND |
| fluoranthene | 2.2 | ND | ND | ND |
| fluorene | 1.9 | ND | ND | ND |
| hexachlorobenzene | 1.9 | ND | ND | ND |
| hexachlorobutadiene | 0.9 | ND | ND | ND |
| hexachlorocyclopentadiene | 25 | ND | ND | ND |
| hexachloroethane | 1.6 | ND | ND | ND |
| indeno(1,2,3-cd)pyrene | 3.7 | ND | ND | ND |
| isophorone | 2.2 | ND | ND | ND |
| naphthalene | 1.6 | ND | ND | ND |
| nitrobenzene | 1.9 | ND | ND | ND |
| o-nitrosodimethylamine | 25 | ND | ND | ND |
| N-nitrosodi-n-propylamine | 25 | ND | ND | ND |
| o-nitrosodiphenylamine | 1.9 | ND | ND | ND |
| phenanthrene | 5.4 | ND | ND | ND |
| pyrene | 1.9 | ND | ND | ND |
| 1,2,4-trichlorobenzene | 1.9 | ND | ND | ND |

ADDITIONAL SAMPLE INFORMATION

| | | | |
|------------------------------------|----------------------------|----------------------------|----------------------------|
| Sample Date | 7/2/84 | 7/3/84 | 7/3/84 |
| Extraction Date | 7/31/84 | 8/22/84 | 7/31/84 |
| Analysis Date | 8/14/84 | 8/23/84 | 8/15/84 |
| Internal Standard - Level | 20 $\mu\text{g}/\text{l}$ | 20 $\mu\text{g}/\text{l}$ | 20 $\mu\text{g}/\text{l}$ |
| deuterated phenanthrene - Recovery | 102% | 82% | 130% |
| Surrogate Standard (SS3) - Level | 120 $\mu\text{g}/\text{l}$ | 120 $\mu\text{g}/\text{l}$ | 120 $\mu\text{g}/\text{l}$ |
| perfluorobiphenyl - Recovery | 54% | 62% | 65% |
| Surrogate Standard (SS4) - Level | 100 $\mu\text{g}/\text{l}$ | 100 $\mu\text{g}/\text{l}$ | 100 $\mu\text{g}/\text{l}$ |
| 2-fluorobiphenyl - Recovery | 61% | 70% | 63% |

FOR RECRA ENVIRONMENTAL LABORATORIES

154

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

BASE/NEUTRALS

| COMPOUND | DETECTION LIMIT ($\mu\text{g/l}$) | SAMPLE IDENTIFICATION | | |
|-----------------------------|---|-----------------------|------|------|
| | | OW-3 | OW-4 | OW-5 |
| acenaphthene | 1.9 | ND | ND | ND |
| acenaphthylene | 3.5 | ND | ND | ND |
| anthracene | 1.9 | ND | ND | ND |
| benzidine | 44 | ND | ND | ND |
| benzo(a)anthracene | 7.8 | ND | ND | ND |
| benzo(a)pyrene | 2.5 | ND | ND | ND |
| benzo(b)fluoranthene | 4.8 | ND | ND | ND |
| benzo(g,h,i)perylene | 4.1 | ND | ND | ND |
| benzo(k)fluoranthene | 2.5 | ND | ND | ND |
| bis(2-chloroethoxy)methane | 5.3 | ND | ND | ND |
| bis(2-chloroethyl)ether | 5.7 | ND | ND | ND |
| bis(2-chloroisopropyl)ether | 5.7 | ND | ND | ND |
| bis(2-ethylhexyl)phthalate | 2.5 | ND | ND | ND |
| -bromophenylphenylether | 1.9 | ND | ND | ND |
| butylbenzylphthalate | 2.5 | ND | ND | ND |
| -chloronaphthalene | 1.9 | ND | ND | ND |
| 4-chlorophenylphenylether | 4.2 | ND | ND | ND |
| irvsene | 2.5 | ND | ND | ND |
| tribenzo(a,h)anthracene | 2.5 | ND | ND | ND |
| 2-dichlorobenzene | 1.9 | ND | ND | ND |
| 3-dichlorobenzene | 1.9 | ND | ND | ND |
| 4-dichlorobenzene | 4.4 | ND | ND | ND |
| 3'-dichlorobenzidine | 16.5 | ND | ND | ND |
| diethylphthalate | 22 | ND | ND | ND |
| dimethylphthalate | 1.6 | ND | ND | ND |
| di-n-butylphthalate | 2.5 | ND | ND | ND |

(Continued)

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

BASE/NEUTRALS

| COMPOUND | DETECTION LIMIT ($\mu\text{g}/\text{l}$) | SAMPLE IDENTIFICATION | | |
|---------------------------|---|-----------------------|------|------|
| | | OW-3 | OW-4 | OW-5 |
| 2,6-dinitrotoluene | 1.9 | ND | ND | ND |
| 2,4-dinitrotoluene | 5.7 | ND | ND | ND |
| di-n-octylphthalate | 2.5 | ND | ND | ND |
| 1,2-diphenylhydrazine | 25 | ND | ND | ND |
| fluoranthene | 2.2 | ND | ND | ND |
| fluorene | 1.9 | ND | ND | ND |
| hexachlorobenzene | 1.9 | ND | ND | ND |
| hexachlorobutadiene | 0.9 | ND | ND | ND |
| hexachlorocyclopentadiene | 25 | ND | ND | ND |
| hexachloroethane | 1.6 | ND | ND | ND |
| indeno(1,2,3-cd)pyrene | 3.7 | ND | ND | ND |
| isophorone | 2.2 | ND | ND | ND |
| naphthalene | 1.6 | ND | ND | ND |
| nitrobenzene | 1.9 | ND | ND | ND |
| N-nitrosodimethylamine | 25 | ND | ND | ND |
| N-nitrosodi-n-propylamine | 25 | ND | ND | ND |
| N-nitrosodiphenylamine | 1.9 | ND | ND | ND |
| phenanthrene | 5.4 | ND | ND | ND |
| pyrene | 1.9 | ND | ND | ND |
| 1,2,4-trichlorobenzene | 1.9 | ND | ND | ND |

ADDITIONAL SAMPLE INFORMATION

| | | | |
|------------------------------------|----------------------------|----------------------------|----------------------------|
| Sample Date | 7/2/84 | 7/3/84 | 7/10/84 |
| Extraction Date | 7/31/84 | 7/31/84 | 7/31/84 |
| Analysis Date | 8/15/84 | 8/15/84 | 8/15/84 |
| Internal Standard - Level | 20 $\mu\text{g}/\text{l}$ | 20 $\mu\text{g}/\text{l}$ | 20 $\mu\text{g}/\text{l}$ |
| deuterated phenanthrene - Recovery | 110% | 130% | 135% |
| Surrogate Standard (SS3) - Level | 120 $\mu\text{g}/\text{l}$ | 120 $\mu\text{g}/\text{l}$ | 120 $\mu\text{g}/\text{l}$ |
| decafluorobiphenyl - Recovery | 65% | 58% | 59% |
| Surrogate Standard (SS4) - Level | 100 $\mu\text{g}/\text{l}$ | 100 $\mu\text{g}/\text{l}$ | 100 $\mu\text{g}/\text{l}$ |
| 2-fluorobiphenyl - Recovery | 56% | 47% | 45% |

FOR RECPA ENVIRONMENTAL LABORATORIES

Sabrina Skaggs

156

DATE

8/24/84

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

BASE/NEUTRALS

| COMPOUND | DETECTION LIMIT (ug/l) | SAMPLE IDENTIFICATION | | |
|-----------------------------|---------------------------|-----------------------|---------------|------|
| | | OW-6 | OSTERMAN WELL | FT-1 |
| acenaphthene | 1.9 | ND | ND | ND |
| acenaphthylene | 3.5 | ND | ND | ND |
| anthracene | 1.9 | ND | ND | ND |
| benzidine | 44 | ND | ND | ND |
| benzo(a)anthracene | 7.8 | ND | ND | ND |
| benzo(a)pyrene | 2.5 | ND | ND | ND |
| benzo(b)fluoranthene | 4.8 | ND | ND | ND |
| benzo(g,h,i)perylene | 4.1 | ND | ND | ND |
| benzo(k)fluoranthene | 2.5 | ND | ND | ND |
| bis(2-chloroethoxy)methane | 5.3 | ND | ND | ND |
| bis(2-chloroethyl)ether | 5.7 | ND | ND | ND |
| bis(2-chloroisopropyl)ether | 5.7 | ND | ND | ND |
| bis(2-ethylhexyl)phthalate | 2.5 | ND | ND | ND |
| 4-bromophenylphenylether | 1.9 | ND | ND | ND |
| butylbenzylphthalate | 2.5 | ND | ND | ND |
| 2-chloronaphthalene | 1.9 | ND | ND | ND |
| 4-chlorophenylphenylether | 4.2 | ND | ND | ND |
| chrysene | 2.5 | ND | ND | ND |
| dibenzo(a,h)anthracene | 2.5 | ND | ND | ND |
| 1,2-dichlorobenzene | 1.9 | ND | ND | ND |
| 1,3-dichlorobenzene | 1.9 | ND | ND | ND |
| 1,4-dichlorobenzene | 4.4 | ND | ND | ND |
| 3,3'-dichlorobenzidine | 16.5 | ND | ND | ND |
| diethylphthalate | 22 | ND | ND | ND |
| dimethylphthalate | 1.6 | ND | ND | ND |
| di-n-butylphthalate | 2.5 | ND | ND | ND |

(Continued)

157

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

VOLATILES

| COMPOUND | DETECTION LIMIT ($\mu\text{g}/\text{l}$) | SAMPLE IDENTIFICATION | | |
|----------------------------|--|-----------------------|-------|------|
| | | OW-1 | OW-1B | OW-2 |
| acrolein | 400 | ND | ND | ND |
| acrylonitrile | 400 | ND | ND | ND |
| benzene | 4.4 | ND | ND | ND |
| bromodichloromethane | 2.2 | ND | ND | ND |
| bromoform | 4.7 | ND | ND | ND |
| bromomethane | 10 | ND | ND | ND |
| carbon tetrachloride | 2.8 | ND | ND | ND |
| chlorobenzene | 6.0 | ND | ND | ND |
| chloroethane | 10 | ND | ND | ND |
| 2-chloroethylvinyl ether | 10 | ND | ND | ND |
| chloroform | 1.6 | ND | ND | ND |
| chloromethane | 10 | ND | ND | ND |
| 1,1-dibromochloromethane | 3.1 | ND | ND | ND |
| 1,1-dichloroethane | 4.7 | ND | ND | ND |
| 1,2-dichloroethane | 2.8 | ND | ND | ND |
| 1,1-dichloroethylene | 2.8 | ND | ND | ND |
| trans-1,2-dichloroethylene | 1.6 | ND | ND | ND |
| 1,2-dichloropropane | 6.0 | ND | ND | ND |
| 1,3-dichloropropene | 5.0 | ND | ND | ND |
| ethylbenzene | 7.2 | ND | ND | ND |
| methylene chloride | 2.8 | ND | ND | ND |
| 1,1,2,2-tetrachloroethane | 6.9 | ND | ND | ND |
| tetrachloroethylene | 4.1 | ND | ND | ND |

(Continued)

158

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

VOLATILES

| COMPOUND | DETECTION LIMIT ($\mu\text{g/l}$) | SAMPLE IDENTIFICATION | | |
|----------------------------|--|-----------------------|------|------|
| | | OW-3 | OW-4 | OW-5 |
| acrolein | 400 | ND | ND | ND |
| crylonitrile | 400 | ND | ND | ND |
| benzene | 4.4 | ND | ND | ND |
| chlorodichloromethane | 2.2 | ND | ND | ND |
| romoform | 4.7 | ND | ND | ND |
| bromomethane | 10 | ND | ND | ND |
| arbon tetrachloride | 2.8 | ND | ND | ND |
| chlorobenzene | 6.0 | ND | ND | ND |
| hloroethane | 10 | ND | ND | ND |
| 2-chloroethylvinyl ether | 10 | ND | ND | ND |
| hloroform | 1.6 | ND | ND | ND |
| chloromethane | 10 | ND | ND | ND |
| ibromochloromethane | 3.1 | ND | ND | ND |
| ,1-dichloroethane | 4.7 | ND | ND | ND |
| ,2-dichloroethane | 2.8 | ND | ND | ND |
| ,1-dichloroethylene | 2.8 | ND | ND | ND |
| trans-1,2-dichloroethylene | 1.6 | ND | ND | ND |
| ,2-dichloropropane | 6.0 | ND | ND | ND |
| 1,3-dichloropropene | 5.0 | ND | ND | ND |
| thylbenzene | 7.2 | ND | ND | ND |
| methylene chloride | 2.8 | ND | ND | ND |
| ,1,2,2-tetrachloroethane | 6.9 | ND | ND | ND |
| tetrachloroethylene | 4.1 | ND | ND | ND |

(Continued)

159

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

VOLATILES

| COMPOUND | DETECTION LIMIT ($\mu\text{g/l}$) | SAMPLE IDENTIFICATION | | |
|-----------------------|--|-----------------------|------|------|
| | | OW-3 | OW-4 | OW-5 |
| toluene | 6.0 | ND | ND | ND |
| 1,1-trichloroethane | 3.8 | ND | ND | ND |
| 1,1,2-trichloroethane | 5.0 | ND | ND | ND |
| trichloroethylene | 1.9 | ND | ND | ND |
| vinyl chloride | 10 | ND | ND | ND |

ADDITIONAL SAMPLE INFORMATION

| | | | |
|-----------------------------------|--------------------|--------------------|--------------------|
| Sample Date | 7/2/84 | 7/3/84 | 7/10/84 |
| Analysis Date | 8/13/84 | 8/13/84 | 8/10/84 |
| Internal Standard - Level | 40 $\mu\text{g/l}$ | 40 $\mu\text{g/l}$ | 40 $\mu\text{g/l}$ |
| bromochloromethane - Recovery | 120% | 97% | 99% |
| Internal Standard - Level | 40 $\mu\text{g/l}$ | 40 $\mu\text{g/l}$ | 40 $\mu\text{g/l}$ |
| -bromo-1-chloropropane - Recovery | 130% | 97% | 90% |
| Internal Standard - Level | 40 $\mu\text{g/l}$ | 40 $\mu\text{g/l}$ | 40 $\mu\text{g/l}$ |
| 1,4-dichlorobutane - Recovery | 130% | 100% | 85% |

FOR RECRA ENVIRONMENTAL LABORATORIES

Selma J. Kujewski
DATE 8/24/84

160

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

VOLATILES

| COMPOUND | DETECTION LIMIT ($\mu\text{g}/\text{l}$) | SAMPLE IDENTIFICATION | | |
|-----------------------|---|-----------------------|-------|------|
| | | OW-1 | OW-1B | OW-2 |
| oluene | 6.0 | ND | ND | ND |
| 1,1,1-trichloroethane | 3.8 | ND | BDL | ND |
| 1,2-trichloroethane | 5.0 | ND | ND | ND |
| trichloroethylene | 1.9 | ND | ND | ND |
| vinyl chloride | 10 | ND | ND | ND |

ADDITIONAL SAMPLE INFORMATION

| | | | |
|------------------------------------|---------------------------|---------------------------|---------------------------|
| Sample Date | 7/2/84 | 7/3/84 | 7/3/84 |
| Analysis Date | 8/13/84 | 8/13/84 | 8/13/84 |
| Internal Standard - Level | 40 $\mu\text{g}/\text{l}$ | 40 $\mu\text{g}/\text{l}$ | 40 $\mu\text{g}/\text{l}$ |
| bromochloromethane - Recovery | 99% | 120% | 96% |
| Internal Standard - Level | 40 $\mu\text{g}/\text{l}$ | 40 $\mu\text{g}/\text{l}$ | 40 $\mu\text{g}/\text{l}$ |
| 2-bromo-1-chloropropane - Recovery | 99% | 110% | 96% |
| Internal Standard - Level | 40 $\mu\text{g}/\text{l}$ | 40 $\mu\text{g}/\text{l}$ | 40 $\mu\text{g}/\text{l}$ |
| 1,4-dichlorobutane - Recovery | 99% | 120% | 100% |

FOR RECRA ENVIRONMENTAL LABORATORIES

Babu J. Kapudji
DATE 8/24/84

161

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

VOLATILES

| COMPOUND | DETECTION LIMIT ($\mu\text{g}/\text{l}$) | SAMPLE IDENTIFICATION | | |
|----------------------------|---|---------------------------|---------------|------|
| | | OW-6 | OSTERMAN WELL | FT-1 |
| acrolein | 400 | ND | ND | ND |
| arylonitrile | 400 | ND | ND | ND |
| benzene | 4.4 | ND | ND | ND |
| bromodichloromethane | 2.2 | ND | ND | ND |
| bromoform | 4.7 | ND | ND | ND |
| bromomethane | 10 | ND | ND | ND |
| carbon tetrachloride | 2.8 | ND | ND | ND |
| chlorobenzene | 6.0 | ND | ND | ND |
| chloroethane | 10 | ND | ND | ND |
| 2-chloroethylvinyl ether | 10 | ND | ND | ND |
| chloroform | 1.6 | ND | ND | ND |
| chloromethane | 10 | ND | ND | ND |
| bromochloromethane | 3.1 | ND | ND | ND |
| 1-dichloroethane | 4.7 | ND | ND | ND |
| 2-dichloroethane | 2.8 | ND | ND | ND |
| 1-dichloroethylene | 2.8 | ND | ND | ND |
| trans-1,2-dichloroethylene | 1.6 | ND | ND | ND |
| 2-dichloropropane | 6.0 | ND | ND | ND |
| 1,3-dichloropropene | 5.0 | ND | ND | ND |
| ethylbenzene | 7.2 | ND | ND | ND |
| methylene chloride | 2.8 | 15 $\mu\text{g}/\text{l}$ | | ND |
| 1,2,2-tetrachloroethane | 6.9 | ND | ND | ND |
| tetrachloroethylene | 4.1 | ND | ND | ND |

(Continued)

162

ANALYTICAL RESULTS

H2M
 GAS CHROMATOGRAPHY/MASS SPECTROMETRY
 PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

VOLATILES

| COMPOUND | DETECTION LIMIT (ug/l) | SAMPLE IDENTIFICATION | | |
|---------------------|---------------------------|-----------------------|---------------|------|
| | | OW-6 | OSTERMAN WELL | FT-1 |
| ene | 6.0 | ND | BDL | ND |
| 1,1-trichloroethane | 3.8 | ND | ND | ND |
| 2-trichloroethane | 5.0 | ND | ND | ND |
| richloroethylene | 1.9 | ND | ND | ND |
| 1-chloride | 10 | ND | ND | ND |

ADDITIONAL SAMPLE INFORMATION

| | | | |
|------------------------------------|---------|---------|---------|
| Sample Date | 7/10/84 | 7/11/84 | 7/3/84 |
| Analysis Date | 8/10/84 | 8/10/84 | 8/10/84 |
| Internal Standard - Level | 40 ug/l | 40 ug/l | 40 ug/l |
| chloromethane - Recovery | 94% | 98% | 89% |
| Internal Standard - Level | 40 ug/l | 40 ug/l | 40 ug/l |
| 2-bromo-1-chloropropane - Recovery | 99% | 95% | 77% |
| Internal Standard - Level | 40 ug/l | 40 ug/l | 40 ug/l |
| dichlorobutane - Recovery | 97% | 96% | 84% |

FOR RECRA ENVIRONMENTAL LABORATORIES

Barbara J Krajewski
8/24/84

DATE

103

ANALYTICAL RESULTS

H2M

Report Date: 8/24/84

| SAMPLE IDENTIFICATION | SAMPLE DATE | PARAMETER (UNITS OF MEASURE) |
|-----------------------|-------------|------------------------------|
| | | TOTAL ORGANIC HALIDE (mg/l) |
| OW-1 | 7/2/84 | <0.02 |
| OW-1B | 7/3/84 | <0.02 |
| OW-2 | 7/3/84 | 0.04 |
| OW-3 | 7/2/84 | 0.04 |
| OW-4 | 7/3/84 | 0.09 |
| OW-5 | 7/10/84 | <0.02 |
| OW-6 | 7/10/84 | 0.12 |
| Osterman Well | 7/11/84 | 0.04 |

FOR RECPA ENVIRONMENTAL LABORATORIES

DATE

Barbara J Krajewski
8/24/84

104

ANALYTICAL RESULTS

H2M

Report Date: 8/24/84

| SAMPLE IDENTIFICATION | SAMPLE DATE | PARAMETER (UNITS OF MEASURE) |
|-----------------------|-------------|------------------------------|
| | | pH (STANDARD UNITS) |
| OW-1 | 7/2/84 | 8.05 |
| OW-1B | 7/3/84 | 8.14 |
| OW-2 | 7/3/84 | 8.12 |
| OW-3 | 7/2/84 | 8.11 |
| OW-4 | 7/3/84 | 8.14 |
| OW-5 | 7/10/84 | 8.16 |
| OW-6 | 7/10/84 | 8.07 |
| FT-1 | 7/3/84 | 6.45 |
| Osterman Well | 7/11/84 | 8.20 |

FOR RECREATIONAL ENVIRONMENTAL LABORATORIES

RAS for Richard V. TammDATE 8/24/84

105

ANALYTICAL RESULTS

H2M
 GAS CHROMATOGRAPHY/MASS SPECTROMETRY
 PRIORITY POLLUTANT ANALYSES
 QUALITY CONTROL

Report Date: 8/24/84

BASE NEUTRAL RECOVERY ANALYSIS OF
 METHOD BLANK

| COMPOUND IDENTIFICATION | ng OF SPIKE | ng RECOVERED | % RECOVERY |
|-------------------------|-------------|--------------|------------|
| 1,3-dichlorobenzene | 50 | 25 | 50 |
| di-n-octylphthalate | 50 | 36 | 72 |
| fluoranthene | 50 | 20 | 40 |
| naphthalene | 50 | 31 | 62 |
| nitrobenzene | 50 | 31 | 62 |

ADDITIONAL SAMPLE INFORMATION

| | |
|------------------------------------|----------|
| Extraction Date | 7/31/84 |
| Analysis Date | 8/14/84 |
| Internal Standard (IS) - Level | 20 µg/l |
| deuterated phenanthrene - Recovery | 140% |
| Surrogate Standard (SS3) - Level | 120 µg/l |
| Decafluorobiphenyl - Recovery | 61% |
| Surrogate Standard (SS4) - Level | 100 µg/l |
| 2-fluorobiphenyl - Recovery | 50% |

FOR RECRA ENVIRONMENTAL LABORATORIES

Babasa J Krajewski

DATE

8/24/84

166

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES
QUALITY CONTROL

Report Date: 8/24/84

VOLATILE RECOVERY ANALYSIS OF
SAMPLE OW-3

| COMPOUND IDENTIFICATION | ng OF SPIKE | ng RECOVERED | % RECOVERY |
|-------------------------|-------------|--------------|------------|
| carbon tetrachloride | 200 | 120 | 60 |
| chlorobenzene | 200 | 160 | 80 |
| chloroethyl vinyl ether | 200 | 180 | 90 |
| chloroform | 200 | 160 | 80 |
| dibromochloromethane | 200 | 110 | 55 |
| 1,1-dichloroethane | 200 | 180 | 90 |
| 1,1-dichloroethylene | 200 | 170 | 85 |
| 1,2-dichloropropane | 200 | 170 | 85 |
| methylene chloride | 200 | 140 | 70 |
| tetrachloroethylene | 200 | 180 | 80 |
| 1,1,2-trichloroethane | 200 | 170 | 85 |
| trichloroethylene | 200 | 160 | 80 |

ADDITIONAL SAMPLE INFORMATION

| | |
|------------------------------------|---------|
| Sample Date | 7/2/84 |
| Analysis Date | 8/13/84 |
| Internal Standard - Level | 40 µg/1 |
| Bromochloromethane - Recovery | 120% |
| Internal Standard - Level | 40 µg/1 |
| 2-bromo-1-chloropropane - Recovery | 130% |
| Internal Standard - Level | 40 µg/1 |
| 1,4-dichlorobutane - Recovery | 130% |

FOR RECRA ENVIRONMENTAL LABORATORIES

Sukasa J. Krajewski
DATE 8/24/84

167

CHAIN OF CUSTODY RECORD

| PROJ. NO. 13305 - 003 | PROJECT NAME Nash Road Site, (Niagara Sanitation) | | NO. OF CON- TAINERS | REMARKS | | | | | | | | | |
|---|--|-------------|------------------------------|--|--------------------------|-----|---|----------------|----|--------------------------------|--|---|--|
| SAMPLERS: (Signature) Lynne H. Baumgaer | | | | 1-PTL glass | FRAGILE | TOX | VOLATILE | PLASTIC-bottle | pH | | | | |
| STA. NO. | DATE | TIME | SOIL CO. | GRAN GEO | STATION LOCATION | | 8 | 3 | 1 | 3 | 1 | In cooler T | |
| OW-1 | 7/28/81 | 5pm | X | | Nash Rd., Wheatfield, NY | | | | | | | Do not test if Dennis Morris label soil is not intact (label is broken) rotate before opening. | |
| | | 7/28/81 6pm | | | | | | | | | | | |
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| | | | | | | | | | | | | | |
| Relinquished by: (Signature) Lynne H. Baumgaer | | | Date / Time 7/28/81 12pm | Received by: (Signature) John J. H. | 7-5 | | Relinquished by: (Signature) Steve Maxwell | | | Date / Time 7-27-81 2:00 PM | Received by: (Signature) John J. H. | | |
| Relinquished by: (Signature) | | | Date / Time | Received by: (Signature) | | | Relinquished by: (Signature) | | | Date / Time | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Date / Time | Received for Laboratory by: (Signature) | | | Remarks | | | | | | |

Distribution: Original Accompanies Shipment; Copy to Coordinator Field File

CHAIN OF CUSTODY RECORD

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Police

OPEN ONE STOP ECO

Distribution: Original Assignments (In Person); Copy to Corresponding Faculty Member

~~CH6000 JF C6000 JDY 10-0 ORL~~

PROJ. NO. **PROJECT NAME**

13305
003

Nash Food Site (Niagara Sanitation)

SAMPLERS: IS...plus

Lynell M. Brumgarde

Distribution: Original Accompanies (Shipment) Copy to Coordinator Field Files

| PROJ. NO. | | PROJECT NAME | | | | CH | JF | JD | JOF | | | |
|------------------------------|---------|-------------------------------------|---|-----------------------|--------------------------|------------------------------|-----------------|--------------------------|-----|---|---|--|
| 12305- | DD3 | Nash Road Site (Niagara Sanitation) | | SAMPLERS: (Signature) | | | | | | | | |
| | | <i>Lynnell Baumgardt</i> | | | | | | | | | | |
| STA. NO. | DATE | TIME | CONT. | GRAB | STATION LOCATION | NO. OF CONTAINERS | 8 | 3 | 1 | 3 | 1 | REMARKS |
| DNW-6 | 7/10/84 | 4 pm | X | | Nash Rd., Wheatfield, NY | | | | | | | In cooler VII |
| | | | | | | | | | | | | <i>DO NOT TEST UNLESS DAMES & NOVUS STABILIS INTACT (LABEL NOT BROKEN)</i> |
| Relinquished by: (Signature) | | Date / Time | Received by: (Signature) | | | Relinquished by: (Signature) | Date / Time | Received by: (Signature) | | | | |
| <i>Lynnell Baumgardt</i> | | 7/11/84 9 am | <i>Star Turnell</i> | 7/16/84 | | <i>Star Turnell</i> | 7-27-84 2:00 PM | <i>Star Turnell</i> | | | | |
| Relinquished by: (Signature) | | Date / Time | Received by: (Signature) | | | Relinquished by: (Signature) | Date / Time | Received by: (Signature) | | | | |
| | | | | | | | | | | | | |
| Relinquished by: (Signature) | | Date / Time | Received for Laboratory by: (Signature) | | | Date / Time | Remarks | | | | | |
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Distribution: Original accompanies Shipment; Copy to Coordinator Field Files

3

ANALYTICAL RESULTS

H2M

GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 8/24/84

| COMPOUND | SAMPLE IDENTIFICATION | | |
|------------------------------------|---|----------------------------|----------------------------|
| | DETECTION LIMIT ($\mu\text{g}/\text{l}$) | OM-6 | OSTERMAN WELL |
| 6-dinitrotoluene | 1.9 | ND | ND |
| 2,4-dinitrotoluene | 5.7 | ND | ND |
| -n-octylphthalate | 2.5 | ND | ND |
| ,2-diphenylhydrazine | 25 | ND | ND |
| fluoranthene | 2.2 | ND | ND |
| fluorene | 1.9 | ND | ND |
| hexachlorobenzene | 1.9 | ND | ND |
| hexachlorobutadiene | 0.9 | ND | ND |
| hexachlorocyclopentadiene | 25 | ND | ND |
| hexachloroethane | 1.6 | ND | ND |
| indeno(1,2,3-cd)pyrene | 3.7 | ND | ND |
| sophorone | 2.2 | ND | ND |
| naphthalene | 1.6 | ND | ND |
| trobenzene | 1.9 | ND | ND |
| -nitrosodimethylamine | 25 | ND | ND |
| N-nitrosodi-n-propylamine | 2.5 | ND | ND |
| -nitrosodiphenylamine | 1.9 | ND | ND |
| phenanthrene | 5.4 | ND | ND |
| pyrene | 1.9 | ND | ND |
| 1,2,4-trichlorobenzene | 1.9 | ND | ND |
| ADDITIONAL SAMPLE INFORMATION | | | |
| Sample Date | 7/10/84 | 7/11/84 | 7/3/84 |
| Extraction Date | 7/31/84 | 7/31/84 | 7/31/84 |
| Analysis Date | 8/15/84 | 8/15/84 | 8/15/84 |
| Internal Standard - Level | 20 $\mu\text{g}/\text{l}$ | 20 $\mu\text{g}/\text{l}$ | 20 $\mu\text{g}/\text{l}$ |
| deuterated phenanthrene - Recovery | 130% | 78% | 135% |
| Surrogate Standard (SS3) - Level | 120 $\mu\text{g}/\text{l}$ | 120 $\mu\text{g}/\text{l}$ | 120 $\mu\text{g}/\text{l}$ |
| Decafluorobiphenyl - Recovery | 71% | 50% | 64% |
| Surrogate Standard (SS4) - Level | 100 $\mu\text{g}/\text{l}$ | 100 $\mu\text{g}/\text{l}$ | 100 $\mu\text{g}/\text{l}$ |
| 2-fluorobiphenyl - Recovery | 63% | 52% | 55% |

FOR RECRA ENVIRONMENTAL LABORATORIES

Sample of Krasinski 174

CHAIN OF CUSTODY RECORD

| PROJ. NO. 13305- 003 | | PROJECT NAME Nash Road Site (Niagara Sanitation) | | NO. OF CONTAINERS | TESTS | | | | REMARKS | |
|---|---------|---|--|-------------------------|--|--------------|------------------------|--|---------|---|
| SAMPLERS: (Signature) | | Lynne M. Baumgras | | | Liquids | Extractables | Tox | Volatile | | |
| STA. NO. | DATE | TIME | CMP. | GRAB | STATION LOCATION | | | | | |
| OSTERMAN WELL | 7/12/84 | 5 PM | X | | Osterman property Nash Rd, Wheatfield, NY | 8 | 3 | 1 | | OSTERMAN WELL (AFTER I EXHAUSTED LAST ONE) |
| | | | | | | | | | | In order VIII |
| | | | | | | | | | | DO NOT TEST IF UNIQUE SEAL IS NOT INTACT (DAMES → MOISTURE LABEL BROKEN) |
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| Relinquished by: (Signature) Lynne M. Baumgras | | Date / Time 7/12/84 5 PM | Received by: (Signature) Strat Minrell 7/16/84 | | Relinquished by: (Signature) Strat Minrell | | Date / Time 7-27-84 | Received by: (Signature) Strat Minrell | | |
| Relinquished by: (Signature) | | Date / Time | Received by: (Signature) | | Relinquished by: (Signature) | | Date / Time | Received by: (Signature) | | |
| Relinquished by: (Signature) | | Date / Time | Received for Laboratory by: (Signature) | | Date / Time | | Remarks | | | |

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Office

CHAIN OF CUSTODY RECORD

Distribution: Original Accessories Shipment; Copy to Coordinator Field File

SEP 07 1984

COMPUCHEM
LABORATORIES

August 30, 1984

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

Dear Mr. Schroder:

Thank you for selecting CompuChem® Laboratories for your recent sample analysis. We have completed the analysis that you requested and have enclosed a summary of the CompuChem® data for your review. Additional data details are available for purchase if you require them.

As you know, EPA has proposed detection limits for the priority pollutants in the December 3, 1979, Federal Register, and we have reported all priority pollutant concentrations which have exceeded these limits (or their equivalent for solid matrices). In addition, we have permanently stored a complete record of your data on magnetic tape. This includes chromatograms, mass spectra, calibration and quality control data for the organics. Therefore, your original data is readily available for future reference. Should you require additional information from your data base, please contact us at 1/800-334-8525.

In order to expedite data to you, we have forwarded the results for all completed analyses. If you submitted more samples than are included in the enclosed results, the data will be forthcoming upon completion of our final review.

Your confidence in our CompuChem® service is appreciated. We look forward to a continuing association.

Sincerely,

Customer Service Dept.
CompuChem®

Enclosure:

Report: OST-1 - 32303

(77)

DATA REPORT NOTICE

CompuChem employs Methods 624 and 625 for GC/MS analysis of organics in liquid matrices. These methods were proposed on December 3, 1979 by the U.S.E.P.A. in Volume 44 of the Federal Register. These methods were subsequently revised and reissued in July, 1982 as publication EPA-600/4-82-057. The EPA Environmental Monitoring and Support Laboratory (EMSL-Cincinnati) has subsequently issued method modifications which provide for the analysis of solid matrices. These modifications specify changes in the sample preparation procedures.

Additionally, for solid samples detection limits and any analytical results reported are based on processing the method specified sample size of as-received material.

The referenced methods are no longer appropriate for several of the original priority pollutant compounds. This is due to either the deletion from the toxic pollutant list (40 CFR Part 401) by EPA or the determination by EPA that the referenced methods may not be optimized for certain compounds (EPA-600/4-82-057) originally incorporated by the methods.

CompuChem® presents these compounds in its sample data report for completeness as many of the government compound list forms continue to display the affected compounds. For consistency, these compounds are reported as "BDL" or "Below Detection Limit" as they are either not likely to exist in the sample or are not likely to be detected by the method. Those compounds which have actually been deleted are listed below with the Federal Register deletion reference.

| <u>Compound Name</u> | <u>GC/MS Fraction</u> | <u>Federal Register</u> | <u>Date</u> |
|-------------------------|-----------------------|-------------------------|-------------|
| Dichlorodifluoromethane | Volatile | 46FR2264 | 1/8/81 |
| *Trichlorofluoromethane | Volatile | 46FR2264 | 1/8/81 |
| Bis(Chloromethyl)Ether | Volatile | 46FR10723 | 2/4/81 |

*While this compound has been deleted, CompuChem® continues to identify and quantitate for it.

178

COMPUCHEM
LABORATORIES

REPORT OF DATA

SAMPLE IDENTIFIER: OST-1
COMPUCHEM SAMPLE NUMBER: 32303

SUBMITTED TO:

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

Diana A. Scammell
DIANA A. SCAMMELL
TECHNICAL SPECIALIST, OPERATIONS

R. L. MYERS, PH.D., PRESIDENT

ROBERT E. MEIERER
DIRECTOR OF QUALITY ASSURANCE

77

LABORATORY CHRONICLE

SAMPLE IDENTIFIER: OST-1
COMPUCHEM SAMPLE NUMBER: 32303

| | <u>Date</u> |
|-----------------------|---------------|
| Received/Refrigerated | 7-27-84 |
| Organics | |
| Extracted | 7-30-84 |
| Analyzed | |
| 1. Volatiles | 7-31-84 |
| 2. Acid | 8-8-84 |
| 3. Base/Neutrals | 8-7-84 |
| 4. Pesticides/PCBS | 8-7-84 |
| Inorganics | |
| 1. Metals | 8-14-84 |
| 2. Cyanide | 8-9-84 |
| 3. Phenols | Not Requested |

180

COMPOUND LIST

- VOLATILES ORGANICS

SAMPLE IDENTIFIER: OST-1
 COMPUCHEM SAMPLE NUMBER: 32303

| | <u>CONCENTRATION</u> <u>(UG/L)</u> | <u>DETECTION+</u> <u>LIMIT</u> <u>(UG/L)</u> |
|----------------------------------|---------------------------------------|--|
| 1V. CHLOROMETHANE | BDL | 10 |
| 2V. VINYL CHLORIDE | BDL | 10 |
| 3V. CHLOROETHANE | BDL | 10 |
| 4V. BROMOMETHANE | BDL | 10 |
| 5V. ACROLEIN | BDL | 100 |
| 6V. ACRYLONITRILE | BDL | 100 |
| 7V. METHYLENE CHLORIDE | 14(BG)* | 10 |
| 8V. TRICHLOROFLUOROMETHANE | BDL | 10 |
| 9V. 1,1-DICHLOROETHYLENE | BDL | 10 |
| 10V. 1,1-DICHLOROETHANE | BDL | 10 |
| 11V. TRANS-1,2-DICHLOROETHYLENE | BDL | 10 |
| 12V. CHLOROFORM | BDL | 10 |
| 13V. 1,2-DICHLOROETHANE | BDL | 10 |
| 14V. 1,1,1-TRICHLOROETHANE | BDL | 10 |
| 15V. CARBON TETRACHLORIDE | BDL | 10 |
| 16V. BROMODICHLOROMETHANE | BDL | 10 |
| 17V. 1,2-DICHLOROPROPANE | BDL | 10 |
| 18V. TRANS-1,3-DICHLOROPROPENE | BDL | 10 |
| 19V. TRICHLOROETHYLENE | BDL | 10 |
| 20V. BENZENE | BDL | 10 |
| 21V. CIS-1,3-DICHLOROPROPENE | BDL | 10 |
| 22V. 1,1,2-TRICHLOROETHANE | BDL | 10 |
| 23V. DIBROMOCHLOROMETHANE | BDL | 10 |
| 24V. BROMOFORM | BDL | 10 |
| 25V. 1,1,2,2-TETRACHLOROETHYLENE | BDL | 10 |
| 26V. 1,1,2,2-TETRACHLOROETHANE | BDL | 10 |
| 27V. TOLUENE | BDL | 10 |
| 28V. CHLOROBENZENE | BDL | 10 |
| 29V. ETHYLBENZENE | BDL | 10 |
| 30V. 2-CHLOROETHYL VINYL ETHER | BDL | 10 |
| 31V. DICHLORODIFLUOROMETHANE† | BDL | |
| 32V. BIS(CHLOROMETHYL)ETHER† | BDL | |

BDL=BELOW DETECTION LIMIT

†See Data Report Notice

*See Quality Control Notice

181

QUALITY ASSURANCE NOTICE

CompuChem Sample No. 32303

Although not required by the Federal Register, December 3, 1979 (modified July, 1982) Volatile Method 624 procedure, the laboratory prepares VOA blanks when compositing water samples and preparing low and medium level hazardous waste VOA samples. This is to insure that the glassware used is free from contamination, and to monitor the possibility of cross-contamination from high levels of volatile organic compounds in some samples and the laboratory atmosphere.

The compositing or method blank (# 32333) prepared with this sample contained the compound(s) listed below. The concentration in the associated sample has been adjusted and the data flagged with a qualifier.

| <u>Compound(s)</u> | <u>Adjusted Sample Concentration (ug/l)</u> | <u>Applicable Qualifier</u> |
|--------------------|---|---------------------------------|
| Methylene Chloride | 14 | BG |

The following data qualifiers are used by EPA and adopted by CompuChem® for reporting purposes:

BG = The concentration in the blank is greater than 1/2 of the method detection limit and is less than or equal to 1/2 the concentration detected in a sample; the concentration in the blank is subtracted from the sample.

182

COMPOUND LIST -- ACID EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: OST-1
COMPUCHEM SAMPLE NUMBER: 32303

| | <u>CONCENTRATION</u> <u>(UG/L)</u> | <u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u> |
|---------------------------|---------------------------------------|---|
| 1A. PHENOL | BDL | 25 |
| 2A. 2-CHLOROPHENOL | BDL | 25 |
| 3A. 2-NITROPHENOL | BDL | 25 |
| 4A. 2,4-DIMETHYLPHENOL | BDL | 25 |
| 5A. 2,4-DICHLOROPHENOL | BDL | 25 |
| 6A. P-CHLORO-M-CRESOL | BDL | 25 |
| 7A. 2,4,6-TRICHLOROPHENOL | BDL | 25 |
| 8A. 2,4-DINITROPHENOL | BDL | 250 |
| 9A. 4-NITROPHENOL | BDL | 25 |
| 10A. 4,6-DINITRO-O-CRESOL | BDL | 250 |
| 11A. PENTACHLOROPHENOL | BDL | 25 |

BDL=BELOW DETECTION LIMIT

183

COMPOUND LIST

--

BASE-NEUTRAL EXTRACTABLE ORGANICS

SAMPLE IDENTIFIER: OST-1
 COMPUCHEM SAMPLE NUMBER: 32303

| | <u>CONCENTRATION</u> <u>(UG/L)</u> | <u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u> |
|---|---------------------------------------|---|
| 1B. N-NITROSODIMETHYLAMINE | BDL | 10 |
| 2B. BIS (2-CHLOROETHYL) ETHER | BDL | 10 |
| 3B. 1,3-DICHLOROBENZENE | BDL | 10 |
| 4B. 1,4-DICHLOROBENZENE | BDL | 10 |
| 5B. 1,2-DICHLOROBENZENE | BDL | 10 |
| 6B. BIS (2-CHLOROISOPROPYL) ETHER | BDL | 10 |
| 7B. HEXACHLOROETHANE | BDL | 10 |
| 8B. N-NITROSODI-N-PROPYLAMINE | BDL | 10 |
| 9B. NITROBENZENE | BDL | 10 |
| 10B. ISOPHORONE | BDL | 10 |
| 11B. BIS(2-CHLOROETHOXY) METHANE | BDL | 10 |
| 12B. 1,2,4-TRICHLOROBENZENE | BDL | 10 |
| 13B. NAPHTHALENE | BDL | 10 |
| 14B. HEXACHLOROBUTADIENE | BDL | 10 |
| 15B. HEXACHLOROCYCLOPENTADIENE | BDL | 10 |
| 16B. 2-CHLORONAPHTHALENE | BDL | 10 |
| 17B. DIMETHYLPHthalATE | BDL | 10 |
| 18B. ACENAPHTHYLENE | BDL | 10 |
| 19B. 2,6-DINITROTOLUENE | BDL | 10 |
| 20B. ACENAPHTHENE | BDL | 10 |
| 21B. 2,4-DINITROTOLUENE | BDL | 10 |
| 22B. DIETHYLPHthalATE | BDL | 10 |
| 23B. FLUORENE | BDL | 10 |
| 24B. 4-CHLOROPHENYL PHENYL ETHER | BDL | 10 |
| 25B. DIPHENYLAMINE (N-NITROSO) | BDL | 10 |
| 26B. 1,2-DIPHENYLHYDRAZINE (AZOBENZENE) | BDL | 10 |
| 27B. 4-BROMOPHENYL PHENYL ETHER | BDL | 10 |
| 28B. HEXACHLOROBENZENE | BDL | 10 |

(Continued)

BDL=BELOW DETECTION LIMIT

184

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLE ORGANICS (Page Two)

SAMPLE IDENTIFIER: OST-1
 COMPUCHEM SAMPLE NUMBER: 32303

| | | <u>CONCENTRATION</u> <u>(UG/L)</u> | <u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u> |
|------|----------------------------|---------------------------------------|---|
| 29B. | PHENANTHRENE | BDL | 10 |
| 30B. | ANTHRACENE | BDL | 10 |
| 31B. | DI-N-BUTYLPHthalATE | BDL | 10 |
| 32B. | FLUORANTHENE | BDL | 10 |
| 33B. | BENZIDINE | BDL | 10 |
| 34B. | PYRENE | BDL | 10 |
| 35B. | BUTYLBENZYLPHthalATE | 33 | 10 |
| 36B. | BENZO(A)ANTHRACENE | BDL | 10 |
| 37B. | 3,3'-DICHLOOROBENZIDINE | BDL | 10 |
| 38B. | CHRYSENE | BDL | 10 |
| 39B. | BIS(2-ETHYLHEXYL)PHTHALATE | BDL | 10 |
| 40B. | DI-N-OCTYLPHthalATE | BDL | 10 |
| 41B. | BENZO(B)FLUORANTHENE | BDL | 10 |
| 42B. | BENZO(K)FLUORANTHENE | BDL | 10 |
| 43B. | BENZO(A)PYRENE | BDL | 10 |
| 44B. | INDENO(1,2,3-C,D)PYRENE | BDL | 25 |
| 45B. | DIBENZO(A,H)ANTHRACENE | BDL | 25 |
| 46B. | BENZO(G,H,I)PERYLENE | BDL | 25 |

BDL=BELOW DETECTION LIMIT

185

COMPOUND LIST -- PESTICIDES/PCB'S

SAMPLE IDENTIFIER: OST-1
 COMPUCHEM SAMPLE NUMBER: 32303

| | | CONCENTRATION (UG/L) | DETECTION LIMIT (UG/L) |
|------|--------------------|-------------------------|------------------------------|
| 1P. | ALDRIN | BDL | 10 |
| 2P. | ALPHA-BHC | BDL | 10 |
| 3P. | BETA-BHC | BDL | 10 |
| 4P. | GAMMA-BHC | BDL | 10 |
| 5P. | DELTA-BHC | BDL | 10 |
| 6P. | CHLORDANE | BDL | 10 |
| 7P. | 4,4'-DDT | BDL | 10 |
| 8P. | 4,4'-DDE | BDL | 10 |
| 9P. | 4,4'-DDD | BDL | 10 |
| 10P. | DIELDRIN | BDL | 10 |
| 11P. | ALPHA-ENDOSULFAN | BDL | 10 |
| 12P. | BETA-ENDOSULFAN | BDL | 10 |
| 13P. | ENDOSULFAN SULFATE | BDL | 10 |
| 14P. | ENDRIN | BDL | 10 |
| 15P. | ENDRIN ALDEHYDE | BDL | 10 |
| 16P. | HEPTACHLOR | BDL | 10 |
| 17P. | HEPTACHLOR EPOXIDE | BDL | 10 |
| 18P. | PCB-1242 | BDL | 10 |
| 19P. | PCB-1254 | BDL | 10 |
| 20P. | PCB-1221 | BDL | 10 |
| 21P. | PCB-1232 | BDL | 10 |
| 22P. | PCB-1248 | BDL | 10 |
| 23P. | PCB-1260 | BDL | 10 |
| 24P. | PCB-1016 | BDL | 10 |
| 25P. | TOXAPHENE | BDL | 10 |

BDL=BELOW DETECTION LIMIT

186

COMPOUND LIST -- INORGANICS PRIORITY POLLUTANTS

SAMPLE IDENTIFIER: OST-1
COMPUCHEM SAMPLE NUMBER: 32303

| | <u>CONCENTRATION</u> <u>(MG/L)</u> | <u>DETECTION LIMIT</u> <u>(MG/L)</u> |
|--------------------|---------------------------------------|---|
| 1. CADMIUM, TOTAL | BDL | 0.010 |
| 2. CHROMIUM, TOTAL | BDL | 0.050 |
| 3. COPPER, TOTAL | BDL | 0.10 |
| 4. LEAD, TOTAL * | 0.14 | 0.50 |
| 5. MERCURY, TOTAL | 0.0008 | 0.0002 |
| 6. ZINC, TOTAL | 0.05 | 0.020 |
| 7. NICKEL, TOTAL | BDL | 0.10 |
| 8. CYANIDE | BDL | 0.01 |

BDL=BELOW DETECTION LIMIT

*Lead analyzed by flame AAS because of concentration level found.

187



COMPUCHEM
LABORATORIES

Send copy to
Gilligan, DEM
File
Rocco

NOV 19 1984

November 8, 1984

Mr. Rocco Palazzolo
Engineering Science, Inc.
7 Executive Park South
Suite 590
Atlanta, GA 30329

RE: Data Inquiry for sample OST-1/32303

Dear Mr. Palazzolo:

Enclosed is an amended compound list for sample number 32303 that reflects the correct detection limit for lead.

We apologize for any inconvenience you may have experienced. If you have further questions please feel free to call me at 1/800-334-8525.

Sincerely,

Diana A. Scammell
Technical Specialist, Operations

cc: Robert Meierer
Mickey Cartagena
File #32303

COMPOUND LIST -- INORGANICS PRIORITY POLLUTANTS

SAMPLE IDENTIFIER: OST-1
COMPUCHEM SAMPLE NUMBER: 32303

| | CONCENTRATION (MG/L) | DETECTION LIMIT (MG/L) |
|--------------------|-------------------------|---------------------------|
| 1. CADMIUM, TOTAL | BDL | 0.010 |
| 2. CHROMIUM, TOTAL | BDL | 0.050 |
| 3. COPPER, TOTAL | BDL | 0.10 |
| 4. LEAD, TOTAL* | 0.14 | 0.050 |
| 5. MERCURY, TOTAL | 0.0008 | 0.00020 |
| 6. ZINC, TOTAL | 0.05 | 0.020 |
| 7. NICKEL, TOTAL | BDL | 0.10 |
| 8. CYANIDE | BDL | 0.010 |

BDL=BELOW DETECTION LIMIT

*Lead analyzed by flame AAS because of concentration level found.

189



RECREA ENVIRONMENTAL LABORATORIES

Division of Recra Research, Inc.

1st sample of G. II Creek. Solv. Chem
1st sample of Osterman Well - Napp
Ran

ANALYTICAL RESULTS

H2M PRIORITY POLLUTANT ANALYSES

Prepared For:

H2M
575 Broadhallow Road
Melville, NY 11747

Prepared By:

Recrea Environmental Laboratories
4248 Ridge Lea Road
Amherst, NY 14226

Report Date: October 3, 1984

190

ANALYTICAL RESULTS

H2M PRIORITY POLLUTANT ANALYSES

Report Date: 10/3/84

INTRODUCTION:

On September 5, 1984 samples were received at Recra Environmental Laboratories. A request was made by H2M to have the samples analyzed for selected fractions of the Environmental Protection Agency decreed priority pollutants.

This report will address the results of those analyses.

METHODS:

Priority pollutant analyses were conducted according to Environmental Protection Agency (EPA) methodologies.

Organic priority pollutants were analyzed by Gas Chromatography/Mass Spectrometry (GC/MS). Pesticide priority pollutants were analyzed by Gas Chromatography.

RESULTS AND DISCUSSION:

No Volatile field blank was received.

Analyses for specific Pesticides/PCB's are based upon the matching of retention times between samples and standards on a single gas chromatographic column. Gas chromatographic values reported as "less than" (<) indicate the working detection limit for the given sample and/or parameter.

Pesticides identified by Gas Chromatography are at concentrations too low for confirmation via Gas Chromatography/Mass Spectrometry.

Compounds reported as ND are "not detected".

Respectfully Submitted,

RECRA ENVIRONMENTAL LABORATORIES

Barbara J. Krajewski

ANALYTICAL RESULTS

H2M
 GAS CHROMATOGRAPHY/MASS SPECTROMETRY
 PRIORITY POLLUTANT ANALYSES

Report Date: 10/3/84

ACID/PHENOLICS

| COMPOUND | DETECTION LIMIT ($\mu\text{g}/\text{l}$) | SAMPLE IDENTIFICATION | |
|-----------------------|--|-----------------------|-------------------|
| | | GILL CREEK | OSTERMAN PROPERTY |
| 2-chlorophenol | 3.3 | ND | ND |
| 2,4-dichlorophenol | 2.7 | ND | ND |
| 2,4-dimethylphenol | 2.7 | ND | ND |
| 4,6-dinitro-o-cresol | 24 | ND | ND |
| 2,4-dinitrophenol | 42 | ND | ND |
| 2-nitrophenol | 3.6 | ND | ND |
| 4-nitrophenol | 2.4 | ND | ND |
| p-chloro-m-cresol | 3.0 | ND | ND |
| pentachlorophenol | 3.6 | ND | ND |
| phenol | 1.5 | ND | ND |
| 2,4,6-trichlorophenol | 2.7 | ND | ND |

ADDITIONAL SAMPLE INFORMATION

| | | |
|--|-----------------------------------|-----------------------------------|
| Sample Date | 7/11/84 | 7/11/84 |
| Extraction Date | 9/7/84 | 9/7/84 |
| Analysis Date | 9/19/84 | 9/19/84 |
| Internal Standard (IS) - Level deuterated phenanthrene - Recovery | 20 $\mu\text{g}/\text{l}$ 100% | 20 $\mu\text{g}/\text{l}$ 110% |
| Surrogate Standard (SS1) - Level 2-fluorophenol - Recovery | 120 $\mu\text{g}/\text{l}$ 55% | 120 $\mu\text{g}/\text{l}$ 30% |
| Surrogate Standard (SS2). - Level pentafluorophenol - Recovery | 120 $\mu\text{g}/\text{l}$ 43% | 120 $\mu\text{g}/\text{l}$ 27% |

FOR RECRA ENVIRONMENTAL LABORATORIES

Suzanne J. Krajewski
 DATE 10/3/84

192

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 10/3/84

BASE/NEUTRALS

| COMPOUND | DETECTION LIMIT ($\mu\text{g/l}$) | SAMPLE IDENTIFICATION | |
|----------------------------|--|-----------------------|-------------------|
| | | GILL CREEK | OSTERMAN PROPERTY |
| acenaphthene | 1.9 | ND | ND |
| acenaphthylene | 3.5 | ND | ND |
| anthracene | 1.9 | ND | ND |
| benzidine | 44 | ND | ND |
| benzo(a)anthracene | 7.8 | ND | ND |
| benzo(a)pyrene | 2.5 | ND | ND |
| benzo(b)fluoranthene | 4.8 | ND | ND |
| benzo(g,h,i)perylene | 4.1 | ND | ND |
| benzo(k)fluoranthene | 2.5 | ND | ND |
| bis(2-chloroethoxy)methane | 5.3 | ND | ND |
| (2-chloroethyl)ether | 5.7 | ND | ND |
| (2-chloroisopropyl)ether | 5.7 | ND | ND |
| bis(2-ethylhexyl)phthalate | 2.5 | ND | ND |
| chlorophenylphenylether | 1.9 | ND | ND |
| butylbenzylphthalate | 2.5 | ND | ND |
| chloronaphthalene | 1.9 | ND | ND |
| 4-chlorophenylphenylether | 4.2 | ND | ND |
| cyclohexene | 2.5 | ND | ND |
| dibenzo(a,h)anthracene | 2.5 | ND | ND |
| 1,2-dichlorobenzene | 1.9 | ND | ND |
| 1,3-dichlorobenzene | 1.9 | ND | ND |
| 1,4-dichlorobenzene | 4.4 | ND | ND |
| 3'-dichlorobenzidine | 16.5 | ND | ND |
| diethylphthalate | 22 | ND | ND |
| dimethylphthalate | 1.6 | ND | ND |
| di-n-butylphthalate | 2.5 | ND | ND |

(Continued)

193

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 10/3/84

BASE/NEUTRALS

| COMPOUND | DETECTION LIMIT ($\mu\text{g/l}$) | SAMPLE IDENTIFICATION | |
|---------------------------|--|-----------------------|-------------------|
| | | GILL CREEK | OSTERMAN PROPERTY |
| 2,6-dinitrotoluene | 1.9 | ND | ND |
| 2,4-dinitrotoluene | 5.7 | ND | ND |
| di-n-octylphthalate | 2.5 | ND | ND |
| 1,2-diphenylhydrazine | 25 | ND | ND |
| fluoranthene | 2.2 | ND | ND |
| fluorene | 1.9 | ND | ND |
| hexachlorobenzene | 1.9 | ND | ND |
| hexachlorobutadiene | 0.9 | ND | ND |
| hexachlorocyclopentadiene | 25 | ND | ND |
| hexachloroethane | 1.6 | ND | ND |
| indeno(1,2,3-cd)pyrene | 3.7 | ND | ND |
| isophorone | 2.2 | ND | ND |
| naphthalene | 1.6 | ND | ND |
| nitrobenzene | 1.9 | ND | ND |
| N-nitrosodimethylamine | 25 | ND | ND |
| N-nitrosodi-n-propylamine | 25 | ND | ND |
| N-nitrosodiphenylamine | 1.9 | ND | ND |
| phenanthrene | 5.4 | ND | ND |
| pyrene | 1.9 | ND | ND |
| 1,2,4-trichlorobenzene | 1.9 | ND | ND |

ADDITIONAL SAMPLE INFORMATION

| | | |
|------------------------------------|---------------------|---------------------|
| Sample Date | 7/11/84 | 7/11/84 |
| Extraction Date | 9/7/84 | 9/7/84 |
| Analysis Date | 9/19/84 | 9/19/84 |
| Internal Standard - Level | 20 $\mu\text{g/l}$ | 20 $\mu\text{g/l}$ |
| deuterated phenanthrene - Recovery | 100% | 110% |
| Surrogate Standard (SS3) - Level | 120 $\mu\text{g/l}$ | 120 $\mu\text{g/l}$ |
| Decafluorobiphenyl - Recovery | 55% | 45% |
| Surrogate Standard (SS4) - Level | 100 $\mu\text{g/l}$ | 100 $\mu\text{g/l}$ |
| 2-fluorobiphenyl - Recovery | 60% | 47% |

FOR RECRA ENVIRONMENTAL LABORATORIES

DATE

Barbara J Krajewski

10/3/84

1984

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 10/3/84

VOLATILES

| COMPOUND | DETECTION LIMIT ($\mu\text{g/l}$) | SAMPLE IDENTIFICATION | |
|----------------------------|--|-----------------------|-------------------|
| | | GILL CREEK | OSTERMAN PROPERTY |
| acrolein | 400 | ND | ND |
| acrylonitrile | 400 | ND | ND |
| benzene | 4.4 | ND | ND |
| bromodichloromethane | 2.2 | ND | ND |
| bromoform | 4.7 | ND | ND |
| bromomethane | 10 | ND | ND |
| carbon tetrachloride | 2.8 | ND | ND |
| chlorobenzene | 6.0 | ND | ND |
| chloroethane | 10 | ND | ND |
| 2-chloroethylvinyl ether | 10 | ND | ND |
| chloroform | 1.6 | ND | ND |
| chloromethane | 10 | ND | ND |
| dibromochloromethane | 3.1 | ND | ND |
| 1,1-dichloroethane | 4.7 | ND | ND |
| 1,2-dichloroethane | 2.8 | ND | ND |
| 1,1-dichloroethylene | 2.8 | ND | ND |
| trans-1,2-dichloroethylene | 1.6 | ND | ND |
| 1,2-dichloropropane | 6.0 | ND | ND |
| 1,3-dichloropropene | 5.0 | ND | ND |
| ethylbenzene | 7.2 | ND | ND |
| methylene chloride | 2.8 | ND | ND |
| 1,1,2,2-tetrachloroethane | 6.9 | ND | ND |
| tetrachloroethylene | 4.1 | ND | ND |

(Continued)

195

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY/MASS SPECTROMETRY
PRIORITY POLLUTANT ANALYSES

Report Date: 10/3/84

VOLATILES

| COMPOUND | DETECTION LIMIT ($\mu\text{g/l}$) | SAMPLE IDENTIFICATION | |
|-----------------------|--|-----------------------|-------------------|
| | | GILL CREEK | OSTERMAN PROPERTY |
| cotene | 6.0 | ND | ND |
| 1,1,1-trichloroethane | 3.8 | ND | ND |
| 1,1,2-trichloroethane | 5.0 | ND | ND |
| trichloroethylene | 1.9 | ND | ND |
| vinyl chloride | 10 | ND | ND |

ADDITIONAL SAMPLE INFORMATION

| | | |
|------------------------------------|--------------------|--------------------|
| Sample Date | 7/11/84 | 7/11/84 |
| Analysis Date | 9/17/84 | 9/17/84 |
| Internal Standard - Level | 40 $\mu\text{g/l}$ | 40 $\mu\text{g/l}$ |
| bromochloromethane - Recovery | 73% | 80% |
| Internal Standard - Level | 40 $\mu\text{g/l}$ | 40 $\mu\text{g/l}$ |
| 2-bromo-1-chloropropane - Recovery | 70% | 73% |
| Internal Standard - Level | 40 $\mu\text{g/l}$ | 40 $\mu\text{g/l}$ |
| 1,4-dichlorobutane - Recovery | 76% | 76% |

FOR RECRA ENVIRONMENTAL LABORATORIES

Barbara J. Krapelski
DATE 10/3/84

196

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY
PRIORITY POLLUTANT ANALYSES

Report Date: 10/3/84

PESTICIDES/PCB'S

SAMPLE IDENTIFICATION (DATE)

| COMPOUND | UNITS OF MEASURE | GILL CREEK (7/11/84) | OSTERMAN PROPERTY (7/11/84) |
|----------------------|------------------|-------------------------|--------------------------------|
| aldrin | ug/l | 0.10 | <0.01 |
| BHC | ug/l | 0.36 | <0.01 |
| α -BHC | ug/l | 0.26 | <0.01 |
| β -BHC | ug/l | 0.05 | <0.01 |
| γ -BHC | ug/l | 0.04 | <0.01 |
| chlordan | ug/l | <0.2 | <0.1 |
| ,4'-DDD | ug/l | <0.02 | <0.01 |
| 4,4'-DDE | ug/l | <0.02 | <0.01 |
| ,4'-DDT | ug/l | <0.02 | <0.01 |
| dieldrin | ug/l | <0.02 | <0.01 |
| α -endosulfan | ug/l | <0.02 | <0.01 |
| β -endosulfan | ug/l | <0.02 | <0.01 |
| endosulfan sulfate | ug/l | <0.02 | <0.01 |
| endrin | ug/l | <0.02 | <0.01 |
| endrin aldehyde | ug/l | <0.02 | <0.01 |
| heptachlor | ug/l | <0.02 | <0.01 |
| heptachlor epoxide | ug/l | <0.02 | <0.01 |
| PCB-1016 | ug/l | <0.2 | <0.2 |
| PCB-1221 | ug/l | <0.4 | <0.2 |
| PCB-1232 | ug/l | <0.4 | <0.2 |
| PCB-1242 | ug/l | <0.2 | <0.1 |
| PCB-1248 | ug/l | <0.2 | <0.1 |
| PCB-1254 | ug/l | <0.2 | <0.1 |
| PCB-1260 | ug/l | <0.2 | <0.1 |
| toxaphene | ug/l | <0.2 | <0.1 |

FOR RECREATIONAL LABORATORIES

*T. Boyle*DATE 10/3/84

ANALYTICAL RESULTS

H2M
PRIORITY POLLUTANT ANALYSES

Report Date: 10/3/84

METALS

| COMPOUND | UNITS OF MEASURE | SAMPLE IDENTIFICATION (DATE) | |
|-----------------|------------------|------------------------------|--------------------------------|
| | | GILLCREEK (7/11/84) | OSTERMAN PROPERTY (7/11/84) |
| Total antimony | mg/l | <0.005 | <0.005 |
| Total arsenic | mg/l | <0.005 | <0.005 |
| Total beryllium | mg/l | <0.005 | <0.005 |
| Total cadmium | mg/l | 0.007 | 0.006 |
| Total chromium | mg/l | <0.005 | <0.005 |
| Total copper | mg/l | 0.010 | 0.013 |
| Total lead | mg/l | <0.005 | <0.005 |
| Total mercury | mg/l | 0.003 | <0.0005 |
| Total nickel | mg/l | <0.005 | <0.005 |
| Total selenium | mg/l | <0.005 | <0.005 |
| Total silver | mg/l | <0.02 | <0.02 |
| Total thallium | mg/l | <0.005 | <0.005 |
| Total zinc | mg/l | 0.061 | 0.258 |

FOR RECRA ENVIRONMENTAL LABORATORIES

D. U. ZimmermanDATE 10/3/84

198



ANALYTICAL RESULTS

H2M
PRIORITY POLLUTANT ANALYSES

Report Date: 10/3/84

MISCELLANEOUS

| COMPOUND | UNITS OF MEASURE | SAMPLE IDENTIFICATION (DATE) | |
|-----------------------------|------------------|------------------------------|--------------------------------|
| | | GILL CREEK (7/11/84) | OSTERMAN PROPERTY (7/11/84) |
| Total cyanide | mg/l | <0.010 | <0.01 |
| Total recoverable phenolics | mg/l | <0.01 | <0.01 |

FOR RECRA ENVIRONMENTAL LABORATORIES

R.V.Z.

DATE

10/3/84

199

ANALYTICAL RESULTS

H2M
 GAS CHROMATOGRAPHY/MASS SPECTROMETRY
 PRIORITY POLLUTANT ANALYSES
 QUALITY CONTROL

Report Date: 10/3/84

EXTRACTABLE RECOVERY ANALYSIS OF
 SAMPLE GILL CREEK

| COMPOUND IDENTIFICATION | ng OF SPIKE | ng RECOVERED | % RECOVERY |
|-------------------------|-------------|--------------|------------|
| 2-chlorophenol | 50 | 43 | 86 |
| 1,3-dichlorobenzene | 50 | 29 | 58 |
| 2,4-dichlorophenol | 50 | 46 | 92 |
| di-n-octylphthalate | 50 | 29 | 58 |
| fluoranthene | 50 | 50 | 100 |
| naphthalene | 50 | 34 | 68 |
| nitrobenzene | 50 | 36 | 72 |
| 2,4,6-trichlorophenol | 50 | 29 | 58 |

ADDITIONAL SAMPLE INFORMATION

| | |
|------------------------------------|----------------------------|
| Sample Date | 7/11/84 |
| Extraction Date | 9/7/84 |
| Analysis Date | 9/19/84 |
| Internal Standard (IS) - Level | 20 $\mu\text{g}/\text{l}$ |
| deuterated phenanthrene - Recovery | 120% |
| Surrogate Standard (SS1) - Level | 120 $\mu\text{g}/\text{l}$ |
| 2-fluorophenol - Recovery | 36% |
| Surrogate Standard (SS2) - Level | 120 $\mu\text{g}/\text{l}$ |
| pentafluorophenol - Recovery | 27% |
| Surrogate Standard (SS3) - Level | 120 $\mu\text{g}/\text{l}$ |
| decafluorobiphenyl - Recovery | 46% |
| Surrogate Standard (SS4) - Level | 100 $\mu\text{g}/\text{l}$ |
| 2-fluorobiphenyl - Recovery | 52% |

FOR RECRA ENVIRONMENTAL LABORATORIES

Bilal J. Krajewski
 DATE 10/3/84

200

RECRA ENVIRONMENTAL LABORATORIES
 I.D. #84-898

ANALYTICAL RESULTS

H2M
GAS CHROMATOGRAPHY
PRIORITY POLLUTANT ANALYSES
QUALITY CONTROL

Report Date: 10/3/84

PESTICIDE RECOVERY ANALYSIS OF
SAMPLE GILL CREEK

| COMPOUND IDENTIFICATION | ng OF SPIKE | ng RECOVERED | % RECOVERY |
|-------------------------|-------------|--------------|------------|
| aldrin | 0.26 | 0.20 | 77 |
| γ -BHC | 0.24 | 0.19 | 79 |
| 4,4'-DDE | 0.25 | 0.20 | 80 |
| β -endosulfan | 0.66 | 0.61 | 92 |
| endrin | 0.23 | 0.29 | 126 |
| heptachlor | 0.24 | 0.18 | 75 |

FOR RECRA ENVIRONMENTAL LABORATORIES

F. BoyleDATE 10/3/84

201

5) TRIP BLANKS

202

*Received at Engg. Science
Warday for Analysis 8/09/84*

CompuChem LABORATORIES

3308 East Chapel Hill/Nelson Highway
P.O. Box 12652
Research Triangle Park, NC 27709

Telephone: 919-549-8263
800-334-8525

August 7, 1984

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

Dear Mr. Schroder:

Thank you for selecting CompuChem® Laboratories for your recent sample analysis. We have completed the analysis that you requested and have enclosed a summary of the CompuChem® data for your review. Additional data details are available for purchase if you require them.

As you know, EPA has proposed detection limits for the priority pollutants in the December 3, 1979, Federal Register, and we have reported all priority pollutant concentrations which have exceeded these limits (or their equivalent for solid matrices). In addition, we have permanently stored a complete record of your data on magnetic tape. This includes chromatograms, mass spectra, calibration and quality control data for the organics. Therefore, your original data is readily available for future reference. Should you require additional information from your data base, please contact us at 1/800-334-8525.

In order to expedite data to you, we have forwarded the results for all completed analyses. If you submitted more samples than are included in the enclosed results, the data will be forthcoming upon completion of our final review.

Your confidence in our CompuChem® service is appreciated. We look forward to a continuing association.

Sincerely,

Customer Service Dept.
CompuChem®

Enclosure:

Report: SD-3 Trip Blank - 32298
SD-2 Trip Blank - 32300
SD-1 Trip Blank - 32302

*RECD/ED
AUG 09 1984
Engineering - Science
Atlanta
203*

COMPUCHEM LABORATORIES IS NO LONGER
AFFILIATED WITH MEAD CORPORATION.

208

DATA REPORT NOTICE

CompuChem employs Methods 624 and 625 for GC/MS analysis of organics in liquid matrices. These methods were proposed on December 3, 1979 by the U.S.E.P.A. in Volume 44 of the Federal Register. These methods were subsequently revised and reissued in July, 1982 as publication EPA-600/4-82-057. The EPA Environmental Monitoring and Support Laboratory (EMSL-Cincinnati) has subsequently issued method modifications which provide for the analysis of solid matrices. These modifications specify changes in the sample preparation procedures.

Additionally, for solid samples detection limits and any analytical results reported are based on processing the method specified sample size of as-received material.

The referenced methods are no longer appropriate for several of the original priority pollutant compounds. This is due to either the deletion from the toxic pollutant list (40 CFR Part 401) by EPA or the determination by EPA that the referenced methods may not be optimized for certain compounds (EPA-600/4-82-057) originally incorporated by the methods.

CompuChem® presents these compounds in its sample data report for completeness as many of the government compound list forms continue to display the affected compounds. For consistency, these compounds are reported as "BDL" or "Below Detection Limit" as they are either not likely to exist in the sample or are not likely to be detected by the method. Those compounds which have actually been deleted are listed below with the Federal Register deletion reference.

| <u>Compound Name</u> | <u>GC/MS Fraction</u> | <u>Federal Register</u> | <u>Date</u> |
|-------------------------|-----------------------|-------------------------|-------------|
| Dichlorodifluoromethane | Volatile | 46FR2264 | 1/8/81 |
| *Trichlorofluoromethane | Volatile | 46FR2264 | 1/8/81 |
| Bis(Chloromethyl)Ether | Volatile | 46FR10723 | 2/4/81 |

*While this compound has been deleted, CompuChem® continues to identify and quantitate for it.

205

CompuChem LABORATORIES

REPORT OF DATA

SAMPLE IDENTIFIER: SD-3 Trip Blank
SD-2 Trip Blank
SD-1 Trip Blank

COMPUCHEM SAMPLE NUMBER: 32298
32300
32302

SUBMITTED TO:

Mr. Ernie Schroder
Engineering Science, Inc.
57 Executive Park South
Suite 590
Atlanta, GA 30329

Diana A. Scammell
DIANA A. SCAMMELL
TECHNICAL SPECIALIST, OPERATIONS

R. L. MYERS, PH.D., PRESIDENT

ROBERT E. MEIERER
DIRECTOR OF QUALITY ASSURANCE

ZOB

LABORATORY CHRONICLE

SAMPLE IDENTIFIER: SD-3 Trip Blank
COMPUCHEM SAMPLE NUMBER: 32298

Date

Received/Refrigerated 07/27/84

Organics

Extracted Not Required

Analyzed

1. Volatiles 07/30/84

2. Acid Not Requested

3. Base/Neutrals Not Requested

4. Pesticides/PCBS Not Requested

Inorganics

1. Metals Not Requested

2. Cyanide Not Requested

3. Phenols Not Requested

207

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: SD-3 Trip Blank
 COMPUTECH SAMPLE NUMBER: 32298

| VOLATILE ORGANICS | CONCENTRATION (UG/L) | DETECTION LIMIT (UG/L) | SCAN NUMBER |
|---|-------------------------|------------------------------|----------------|
| 1V. CHLOROMETHANE | BDL | 10 | |
| 2V. VINYL CHLORIDE | BDL | 10 | |
| 3V. CHLOROETHANE | BDL | 10 | |
| 4V. BROMOMETHANE | BDL | 10 | |
| 5V. ACROLEIN | BDL | 100 | |
| 6V. ACRYLONITRILE | BDL | 100 | |
| 7V. METHYLENE CHLORIDE | BDL | 10 | |
| 8V. TRICHLOROFUOROMETHANE | BDL | 10 | |
| 9V. 1,1-DICHLOROETHYLENE | BDL | 10 | |
| 10V. 1,1-DICHLOROETHANE | BDL | 10 | |
| 11V. TRANS-1,2-DICHLOROETHYLENE | BDL | 10 | |
| 12V. CHLOROFORM | BDL | 10 | |
| 13V. 1,2-DICHLOROETHANE | BDL | 10 | |
| 14V. 1,1,1-TRICHLOROETHANE | BDL | 10 | |
| 15V. CARBON TETRACHLORIDE | BDL | 10 | |
| 16V. BROMODICHLOROMETHANE | BDL | 10 | |
| 17V. 1,2-DICHLOROPROPANE | BDL | 10 | |
| 18V. TRANS-1,3-DICHLOROPROPENE | BDL | 10 | |
| 19V. TRICHLOROETHYLENE | BDL | 10 | |
| 20V. BENZENE | BDL | 10 | |
| 21V. CIS-1,3-DICHLOROPROPENE | BDL | 10 | |
| 22V. 1,1,2-TRICHLOROETHANE | BDL | 10 | |
| 23V. DIBROMOCHLOROMETHANE | BDL | 10 | |
| 24V. BROMOFORM | BDL | 10 | |
| 25V. 1,1,2,2-TETRACHLOROETHYLENE | BDL | 10 | |
| 26V. 1,1,2,2-TETRACHLOROETHANE | BDL | 10 | |
| 27V. TOLUENE | BDL | 10 | |
| 28V. CHLOROBENZENE | BDL | 10 | |
| 29V. ETHYLBENZENE | BDL | 10 | |
| 30V. 2-CHLOROETHYL VINYL ETHER | BDL | 10 | |
| 31V. DICHLORODIFLUOROMETHANE [†] | BDL | 10 | |
| 32V. BIS(CHLOROMETHYL)ETHER [†] | BDL | | |

BDL=BELOW DETECTION LIMIT

[†]See Data Report Notice

208

LABORATORY CHRONICLE

SAMPLE IDENTIFIER: SD-2 Trip Blank
COMPUCHEM SAMPLE NUMBER: 32300

| | <u>Date</u> |
|-----------------------|---------------|
| Received/Refrigerated | 07/27/84 |
| Organics | |
| Extracted | Not Required |
| Analyzed | |
| 1. Volatiles | 07/30/84 ✓ |
| 2. Acid | Not Requested |
| 3. Base/Neutrals | Not Requested |
| 4. Pesticides/PCBS | Not Requested |
| Inorganics | |
| 1. Metals | Not Requested |
| 2. Cyanide | Not Requested |
| 3. Phenols | Not Requested |

209

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: SD-2 Trip Blank
 COMPUTECH SAMPLE NUMBER: 32300

| VOLATILE ORGANICS | CONCENTRATION (UG/L) | DETECTION LIMIT (UG/L) | SCAN NUMBER |
|---|-------------------------|------------------------------|----------------|
| 1V. CHLOROMETHANE | BDL | 10 | |
| 2V. VINYL CHLORIDE | BDL | 10 | |
| 3V. CHLOROETHANE | BDL | 10 | |
| 4V. BROMOMETHANE | BDL | 10 | |
| 5V. ACROLEIN | BDL | 100 | |
| 6V. ACRYLONITRILE | BDL | 100 | |
| 7V. METHYLENE CHLORIDE | BDL | 10 | |
| 8V. TRICHLOROFUOROMETHANE | BDL | 10 | |
| 9V. 1,1-DICHLOROETHYLENE | BDL | 10 | |
| 10V. 1,1-DICHLOROETHANE | BDL | 10 | |
| 11V. TRANS-1,2-DICHLOROETHYLENE | BDL | 10 | |
| 12V. CHLOROFORM | BDL | 10 | |
| 13V. 1,2-DICHLOROETHANE | BDL | 10 | |
| 14V. 1,1,1-TRICHLOROETHANE | BDL | 10 | |
| 15V. CARBON TETRACHLORIDE | BDL | 10 | |
| 16V. BROMODICHLOROMETHANE | BDL | 10 | |
| 17V. 1,2-DICHLOROPROPANE | BDL | 10 | |
| 18V. TRANS-1,3-DICHLOROPROPENE | BDL | 10 | |
| 19V. TRICHLOROETHYLENE | BDL | 10 | |
| 20V. BENZENE | BDL | 10 | |
| 21V. CIS-1,3-DICHLOROPROPENE | BDL | 10 | |
| 22V. 1,1,2-TRICHLOROETHANE | BDL | 10 | |
| 23V. DIBROMOCHLOROMETHANE | BDL | 10 | |
| 24V. BROMOFORM | BDL | 10 | |
| 25V. 1,1,2,2-TETRACHLOROETHYLENE | BDL | 10 | |
| 26V. 1,1,2,2-TETRACHLOROETHANE | BDL | 10 | |
| 27V. TOLUENE | BDL | 10 | |
| 28V. CHLOROBENZENE | BDL | 10 | |
| 29V. ETHYLBENZENE | BDL | 10 | |
| 30V. 2-CHLOROETHYL VINYL ETHER | BDL | 10 | |
| 31V. DICHLORODIFLUOROMETHANE [†] | BDL | | |
| 32V. BIS(CHLOROMETHYL)ETHER [†] | BDL | | |

BDL=BELOW DETECTION LIMIT

[†]See Data Report Notice

210

LABORATORY CHRONICLE

SAMPLE IDENTIFIER: SD-1 Trip Blank
COMPUCHEM SAMPLE NUMBER: 32302

Received/Refrigerated Date 07/27/84

Organics

| | |
|--------------------|---------------|
| Extracted | Not Required |
| Analyzed | |
| 1. Volatiles | 07/30/84 |
| 2. Acid | Not Requested |
| 3. Base/Neutrals | Not Requested |
| 4. Pesticides/PCBS | Not Requested |

Inorganics

| | |
|------------|---------------|
| 1. Metals | Not Requested |
| 2. Cyanide | Not Requested |
| 3. Phenols | Not Requested |

211

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: SD-1 Trip Blank
 COMPUCHEM SAMPLE NUMBER: 32302

| VOLATILE ORGANICS | CONCENTRATION (UG/L) | DETECTION LIMIT (UG/L) | SCAN NUMBER |
|---|-------------------------|------------------------------|----------------|
| 1V. CHLOROMETHANE | BDL | 10 | |
| 2V. VINYL CHLORIDE | BDL | 10 | |
| 3V. CHLOROETHANE | BDL | 10 | |
| 4V. BROMOMETHANE | BDL | 10 | |
| 5V. ACROLEIN | BDL | 100 | |
| 6V. ACRYLONITRILE | BDL | 100 | |
| 7V. METHYLENE CHLORIDE | BDL | 10 | |
| 8V. TRICHLOROFLUOROMETHANE | BDL | 10 | |
| 9V. 1,1-DICHLOROETHYLENE | BDL | 10 | |
| 10V. 1,1-DICHLOROETHANE | BDL | 10 | |
| 11V. TRANS-1,2-DICHLOROETHYLENE | BDL | 10 | |
| 12V. CHLORFORM | BDL | 10 | |
| 13V. 1,2-DICHLOROETHANE | BDL | 10 | |
| 14V. 1,1,1-TRICHLOROETHANE | BDL | 10 | |
| 15V. CARBON TETRACHLORIDE | BDL | 10 | |
| 16V. BROMODICHLOROMETHANE | BDL | 10 | |
| 17V. 1,2-DICHLOROPROPANE | BDL | 10 | |
| 18V. TRANS-1,3-DICHLOROPROPENE | BDL | 10 | |
| 19V. TRICHLOROETHYLENE | BDL | 10 | |
| 20V. BENZENE | BDL | 10 | |
| 21V. CIS-1,3-DICHLOROPROPENE | BDL | 10 | |
| 22V. 1,1,2-TRICHLOROETHANE | BDL | 10 | |
| 23V. DIBROMOCHLOROMETHANE | BDL | 10 | |
| 24V. BROMOFORM | BDL | 10 | |
| 25V. 1,1,2,2-TETRACHLOROETHYLENE | BDL | 10 | |
| 26V. 1,1,2,2-TETRACHLOROETHANE | BDL | 10 | |
| 27V. TOLUENE | BDL | 10 | |
| 28V. CHLOROBENZENE | BDL | 10 | |
| 29V. ETHYLBENZENE | BDL | 10 | |
| 30V. 2-CHLOROETHYL VINYL ETHER | BDL | 10 | |
| 31V. DICHLORODIFLUOROMETHANE [†] | BDL | 10 | |
| 32V. BIS(CHLOROMETHYL)ETHER [†] | BDL | 10 | |

BDL=BELOW DETECTION LIMIT

[†]See Data Report Notice

212

(RE 15)

Peter Buechi, Senior Sanitary Engineer, Region 9
Martin S. Ferguson, Environmental Chemist, Hazardous Site Control
Sample Testing from the Nash Road Site

August 29, 1983

Enclosed is a Laboratory Test Report for the sampling of ponded water taken July 11, 1983 at the Nash Road Site. Diethyl phthalate, Terbutol and Toluene were identified in the extracted sample. The former and latter are hazardous wastes (priority pollutants).

MSF:c1
Enclosure

cc: J. Rankin
C. Goddard

213

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Solid Waste

Mobile Laboratory

Facility: Nash Rd.

Sample Type: Powder II, G

Date Sampled: 7/11/83

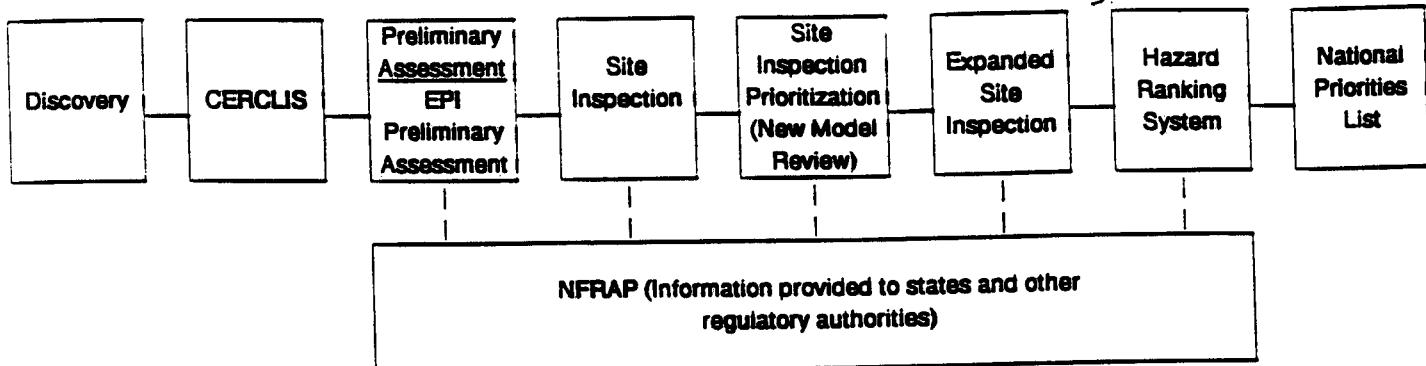
215

ATTACHMENT 2

Review of Analytical Data

If previous analytical data are available, they should be reviewed for information which supports the design of the sampling and analysis program, tests site hypotheses, and documents the site score. The Site Investigation (SI) investigator should review all previous analytical data. While analytical data collected for other purposes may not meet SI objectives, site-specific analytical data are generally helpful in better understanding the nature of the problem at the site, regardless of data sources or data quality. The depth of the review depends on the overall quality and quantity of data, the intended use of the data, and whether they are representative of current site conditions and comparable to SI data. Determining whether available data can be applied as SI-generated data requires the professional judgement of an experienced reviewer. Both validated and non-validated analytical data may be available. Previous SI data will be validated and of CLP-quality. Non-validated data may contain false positive and false negatives, as well as quantitation, transcription, and calculation errors. If data of unknown or questionable quality are used for decision-making, the investigator should review all available information to assess the level of certainty associated with the data. If these data are used for HRS documentation, data validation will be necessary. The investigator should be able to determine the general quality of the data set by reviewing QC data for evaluation under the Superfund Program.

SUPERFUND SITE ASSESSMENT PROGRAM



SITE ASSESSMENT REPORTS

1. PRELIMINARY ASSESSMENT

- * Quick Review of Readily Accessible Records and Reports
- * Undertaken to Determine the Existence of a Problem and the Need for Further Action at a Site by Characterizing:
 - Magnitude of the Hazard
 - Source and Nature of the Release or Potential Release
 - Identification of Targets
- * Does Not Include Sample Collection

2. SITE INSPECTION

- * The Purpose of the Site Inspection is to:
 - Further Define and Characterize the Problem
 - Provide Data for the Hazard Ranking System (HRS) Scoring and Compute Initial Score
 - Identification of Targets
 - Determine the Necessity of Further Action
- * The Site Inspection Involves an On-Site Visit and Sampling (10+/- Samples)
- * A Site Inspection is not an Extent of Contamination Study

3. SITE INSPECTION PRIORITIZATION

- * Quick Review of Readily Accessible Records and Reports
- * Undertaken to Determine the Validity and Update Background Conditions Under the New HRS Model, and the Need for Further Action at a Site by Characterizing:
 - Magnitude of the Hazard
 - Source and Nature of the Release or Potential Release
- * Included On-Site Visits or Sample Collection as needed
 - Analyze Samples/Limited Analytical Resources
 - Account for Significant Safety Hazards On-Site

4. EXPANDED SITE INSPECTION

A Follow-Up Inspection May Be Recommended After the SI To:

- * Gather Additional Data Necessary to Strengthen or Substantiate the Initial HRS Score
 - Geophysical Surveys
 - Installation of Groundwater Monitoring Wells
 - Additional Sampling